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MARCH 2000

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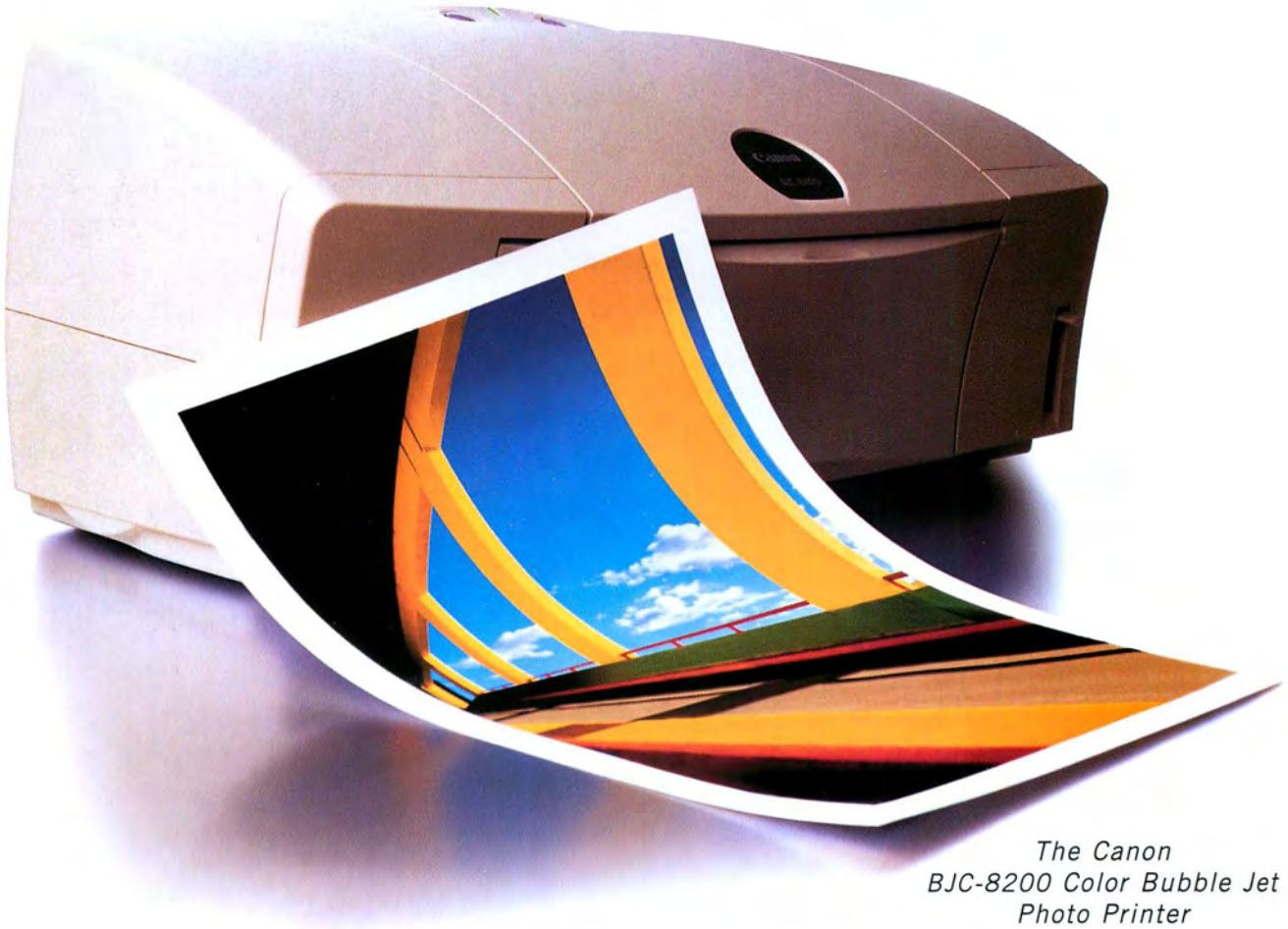
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MARCH 2000

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Features

Cover Story

68 Mac OS X Unveiled!
BY JASON SNELL Take a sneak peek at the amazing Mac interface of the future.

74 Top Secret OS 9
BY FRANKLIN TESSLER Our insider tricks will help you take advantage of the true power of the Mac OS.



See the OS of the future—today, page 68.



Join the party with 1999's Eddy Award winners, page 80.

80 The 15th Annual Editors' Choice Awards
Get acquainted with 1999's hottest and most influential Macintosh products.

88 Easy Money
BY JAMES BRADBURY Feeling the tax-time blues? Make your money work for you with these Quicken Deluxe 2000 tips.

Create

Print

99 Getting Into InDesign
BY DAVID BLATNER Expert tips on how to cope with the switch from QuarkXPress to Adobe InDesign.

Graphics

104 The Painted Layer
BY CATHY ABES Add depth to backgrounds by letting the layers show through in Painter 6.

Sound

107 Music in the Key of USB
BY JIM HEID How to conquer the new challenges of using MIDI with G3 and G4 Macs.



Get the upper hand on OS 9, page 74.



Control your audio and video from a distance, page 60.

News

25 Microsoft Revs Up Internet Explorer
The latest version of Microsoft's Web browser aims to provide faster performance and greater reliability.

26 Macworld Expo Best of Show
Once again, our editors pick the hottest new products unveiled at Macworld Expo.

26 MetaCreations Meltdown
MetaCreations shocks customers by announcing it will divest itself of key graphics applications.

27 G4 Line Gets a Makeover
Apple's new 350MHz Power Mac G4 configuration features an updated system architecture.



See what made a splash at Macworld Expo, page 26.

Opinion

17 Letters

23 The Vision Thing
BY ANDREW GORE It's the other Mac OS. You call it the Internet.

63 The Game Room
BY CHRISTOPHER BREEN Football finally comes to the Mac. Here's how to tackle Madden NFL 2000.

176 The Desktop Critic
BY DAVID POGUE Different doesn't always mean better—look at Apple's latest interface "enhancements."

20 How to Contact Macworld



Let your Mac lend you a high-end hand, page 95.

Secrets

95 Help: You Need It More Than You Think
BY JOSEPH SCHORR The Mac Help Center isn't just for beginners. Here are some valuable high-end tips.

97 Quick Tips
BY LON POOLE Tips, tricks, and shortcuts.

Reviews

30 ★★★ **Brother MFC-8600;**
★★★ **Canon MultiPass C635;**
★★★ **Epson Stylus Scan 2000;**
★★★ **Epson Stylus Scan 2500**
Multifunction peripherals

32 ★★★★ **Deneba Canvas 7.0**
Integrated graphics software

34 ★★★★ **Adobe After Effects 4.1**
Video-effects software

34 ★★★½ **Psunami**
After Effects plug-in

36 ★★★★ **Apple iMac 350MHz**
Consumer system

38 ★★½ **Adobe PressReady 1.0**
PostScript 3 printing software

40 ★★★★½ **DenebaCAD 2.0**
Architectural CAD software

42 ★★★★ **Finale 2000;**
★★★★ **Sibelius**
Music-notation software

44 ★★★★ **Dramatica Pro 4.0;**
★★½ **Plots Unlimited 1.04**
Fiction-writing tools

46 ★★★★½ **Outlook Express 5.0**
E-mail client

48 ★★★ **Wacom Graphire**
Graphics tablet

50 ★★★★ **Adaptec PowerDomain 39160**
Ultra 3 Wide SCSI card

52 ★★★★ **Elo TouchSystems iTouch;**
★★★★ **MicroTouch TouchStation**
Touch-screen iMacs

54 ★★★ **Corel Print House 2000**
Consumer graphics software

56 ★★★★ **PhotoGenetics**
Consumer image editing

58 ★★★★ **LuraWave;**
★★★ **PhotoJazz 2**
Image-compression plug-ins

60 ★★★½ **Keyspan Digital Media Remote**
Remote control

61 ★★★★ **Madden NFL 2000**
Football simulation game

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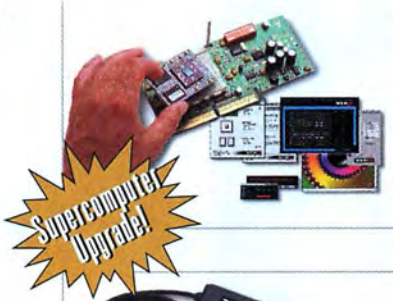
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Letters

Revolution OS 9

MACWORLD'S COVER STORY "MAC OS 9" (December 1999) was one long advertising paean to software I'd designate a beta version to be used strictly at your own risk. I made two mistakes: purchasing OS 9 and installing OS 9. I lost my Hewlett-Packard printer (I couldn't even access the Page Setup dialog box), I lost my scanner, and I lost my Internet connections. In brief, I lost the ability to do much of what I do with my computer. Perhaps I am unique in this experience, but I doubt it, and I can't believe that Bortman's article expressed only sweetness and light. I lost nearly 20 hours removing OS 9; erasing my hard drive to make sure it was completely gone; and reinstalling 8.6 and all my various applications, settings, and files. I've learned my lesson and shall hereafter be as suspicious of Apple's products as I am of those from Apple's competitors.

NORMAN WEINSTEIN
New York, New York

AS A MAC USER AND A PERSON WHO protects himself with PGP, I am interested in learning more about Mac OS 9's built-in encryption. The only information on Apple's site is more of a sales pitch than a useful guide to the company's encryption methods. *Ironclad security* doesn't mean a whole lot.

So which algorithm does OS 9 use for encryption? IDEA? Blowfish? DES? As each has a different speed and efficiency rating, I'd be curious to know how OS 9 matches up.

MAHLON SMITH
Ashland, Oregon



DAVE CUTLER

OS 9 uses 56-bit Apple Secure Compression (a technology generated by Apple and based on RSA Security's PKCS 7, an MD5 encryption algorithm). Of course, 56-bit isn't particularly impressive, but Apple says that it had to use this bit length to make the OS exportable. The Keychain, which can encrypt only passwords and is therefore exempt from export restrictions, employs 128-bit Fast Elliptical Encryption.—Ed.

READING ABOUT THE SWEET "NEW" Keychain included in Mac OS 9 (but originally from the 7.6 era), I can't help wondering why Apple doesn't give a Cyberdog-like Internet application a chance. Sadly, Apple ditched Cyberdog along with OpenDoc, but maybe it shouldn't have. Offering an Internet application that did everything under the sun positively screamed Think Different to me. While some might argue that specialized client programs are better and that Apple would have quite a time trying to bust in on the browser market, I think that a non-OpenDoc Cyberdog 2 would tie in beautifully with a Sherlock 3, both to be released exclusively with OS X.

BEN MALKEVITCH
Princeton, New Jersey

Game Hall of Shame

I AM QUITE DISAPPOINTED WITH "The 1999 Macworld Game Hall of Fame" (December 1999). Christopher Breen did not include what may be one of the most remarkable games in years: Bungie Software's Oni. Terminal Reality and Gathering of Developers' Fly also gets no mention, while the then-unreleased Madden NFL 2000 from Aspyr Media, MacSoft's Unreal Tournament, and Activision's Quake III: Arena took center stage. I thought *Macworld* rated only shipping products!

Also, I firmly believe that Apple does not yet deserve the award for best Mac game supporter. While the ATI Rage 128 in the pro systems is a step forward, Apple's hardware still has a long way to go. Any developer would tell you that Apple lags behind PC manufacturers in 3-D sound, foolishly underclocks the Rage cards in the G3s and G4s, and is slow to improve input-device support. Perhaps the iSub signals the end of Apple's deafness to gamers' cries for better audio, but we have yet to hear anything about a sound system for the G4s.

RICKY SPERO
Bethesda, Maryland

This year, as in past years, we attempted to include as many games slated to appear in the current year as possible. With this in mind, we contacted the major game vendors and asked for prerelease copies of their products. We saw

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MACWEEK.COM
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enough of Madden, Unreal Tournament, and Quake III to know we had some extraordinary products and worthy Game Hall of Fame entrants in hand (although you'll notice that we did not, in fact, rate the games, as they weren't shipping). Bungie wasn't sure that Oni would be released by the end of the year and therefore chose not to send us an early version of the game. As for Fly—you'll have to complain to the committee. They simply found MacSoft's Falcon 4.0 to be the better flight simulation. —Christopher Breen

Eudora Has No Socks

AS A LONGTIME EUDORA USER, BOTH at home and work, I agreed with most of Tom Negrino's assessment of Qualcomm's Eudora Pro 4.2 (*Reviews*, December 1999), except for one thing: when Eudora sits behind a Microsoft proxy firewall, it's only a functionless chunk of code. Unlike the Windows version, the Mac version cannot be configured for Socks. So, like it or not, all of us Mac users at work have been strong-armed into using Microsoft Outlook Express. Sure, one could rail against the obvious Microsoft strategy of making its proxy software incompatible with competing software, but why hasn't Qualcomm come up with a solution? If Eudora loses the e-mail–client war, it will have itself to blame.

JIM BUCAR
New Haven, Connecticut

InDesign Printing Woes

INDESIGN HAS SO MUCH GOING FOR it, with its flexible and versatile plug-in architecture, that I believe it will eventually beat QuarkXPress (*Reviews*, December 1999).

But there's a price to pay for these capabilities: heavy hardware requirements and the need for at least a PostScript Level 2 printer. So where does that leave us small freelancers who need to print color proofs on our ink-jet printers? How do I fax pages to my clients if InDesign cannot tap into the QuickDraw engine? I don't have the space—or the money—to splurge on a Postscript 2 (or 3) color printer. Must I go through the work of creating PDF files before printing or faxing? Sure, I have StyleScript, which I use every so often. But as I understand it, InDesign doesn't like emulators such as this one, even though StyleScript uses true Adobe Level 2 routines.

Make no mistake, I intend to go with InDesign, if only for the typographical features. Now if I can only find an affordable, small, Postscript Level 2 laser printer.

ROBERTO GALLARDO
Hong Kong, China

Bad Intuition

MACWORLD'S REVIEW OF INTUIT'S Quicken Deluxe 2000 (*Reviews*, December 1999) says that it has OFX support and that shortly after its release users had trouble downloading from some institutions.

My version of Quicken Deluxe 2000 did not have OFX support, and as of late October, Intuit had not supplied a patch or fix for the downloading problems, which are severe. These problems were so bad that Intuit's Quicken technical support recommended I go back to Quicken 98.

What's really aggravating is that Intuit sold a product that is essentially unusable and that the company didn't inform users when it would fix the problems. That is unethical, to say the least. Your readers should know what kind of a company Intuit is. Quicken Deluxe 2000 doesn't work, and Macintosh users intending to use the software on the Internet shouldn't purchase it.

JEROME D. BASHINSKI
El Dorado Hills, California

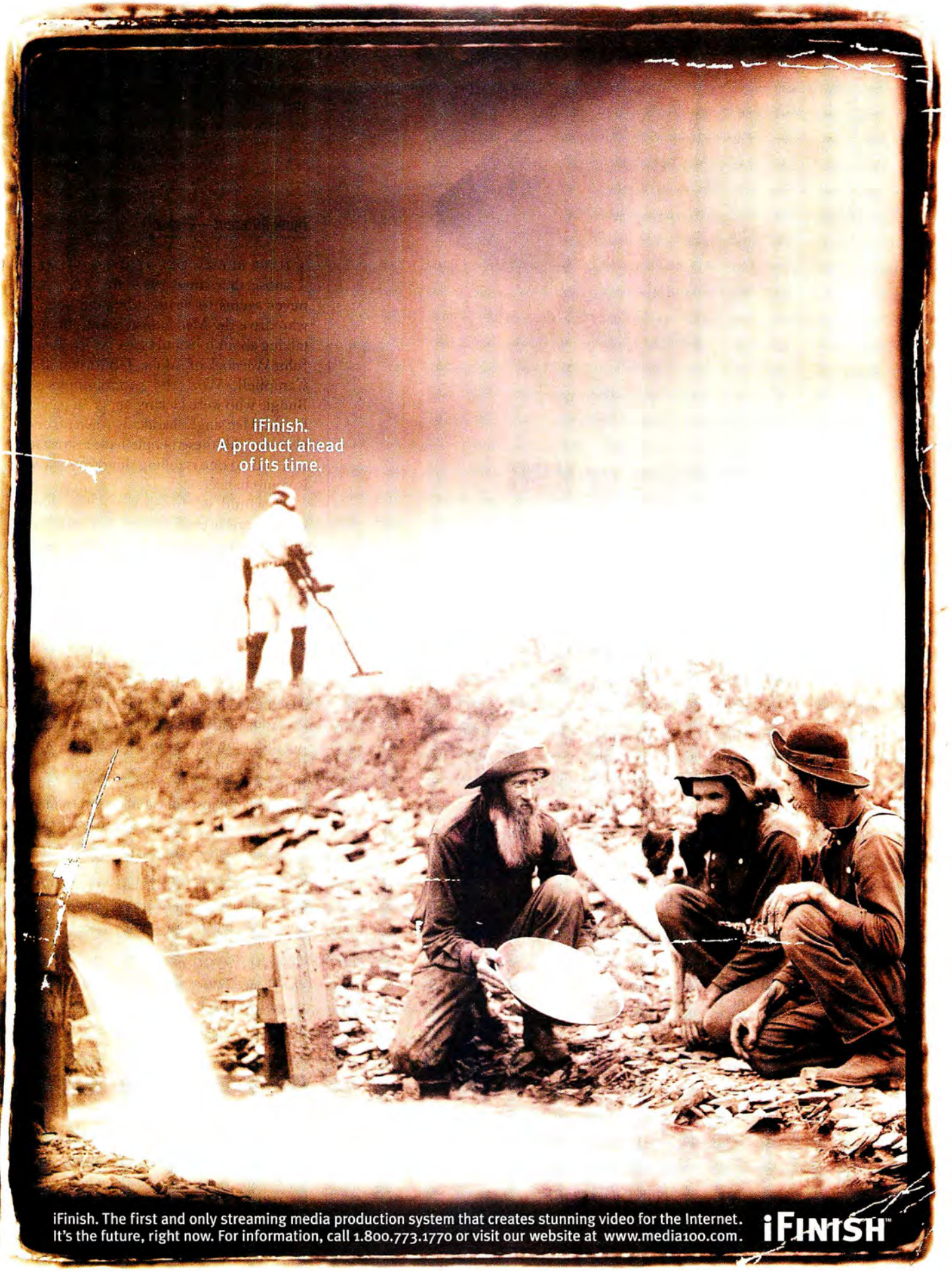
Quicken finally released a patch for Quicken Deluxe 2000. It is available at www.intuit.com/support/quicken/updates/.—Ed.

Not-So-Smart Coda

YOU MENTION IN YOUR REVIEW OF Musitek's SmartScore 1.2.2 (*Reviews*, December 1999) that Coda Music Technology's Finale can read SmartScore's files, but this is not true. Unfortunately, there are currently no programs for the Mac that read native SmartScore files.

Although this feature was announced with the release of Finale 2000, it is available only in the PC version and is not slated for the Mac until the release of Finale 2001. For now, you can import SmartScore files as MIDI files, but you

continues



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lose valuable notation data. Hopefully, Finale 2001 will resolve this by next year, and perhaps we'll see an upgrade for SmartScore as well.

STEVE CARRYER
Troy, Michigan

Think Different—Please!

I HAVE BEEN A DEVOTED *MACWORLD* subscriber since 1994. But *Macworld* never seems to write about the people who drive the Mac industry. And I'm not talking about Jobs and Gates. What about John Warnock of Adobe, Jeff Raskin, Bill Campbell, Woz, the programmers at Bungie who were kicking out great games for the Mac single-handedly when no one else was? All these people have a story to tell, and no one is telling their tales. Now is your chance.

I would venture to say that your readers are pretty affluent. I would also guess that we read more than most people. We want to be engaged at a higher level. Give us a perspective that no one else does. My gosh, *Time* and *Newsweek* interviewed Jobs, Gates, and even Jonathan Ive. Where have your reporters been? Rehashing the new iMac we've known about for two weeks? Any Mac news site can give me that.

Your magazine has clout. Start thinking different. Sure, I make my living with the Mac, but the Mac means more than that to me. I want a story. I want to be engaged, not just educated or entertained.

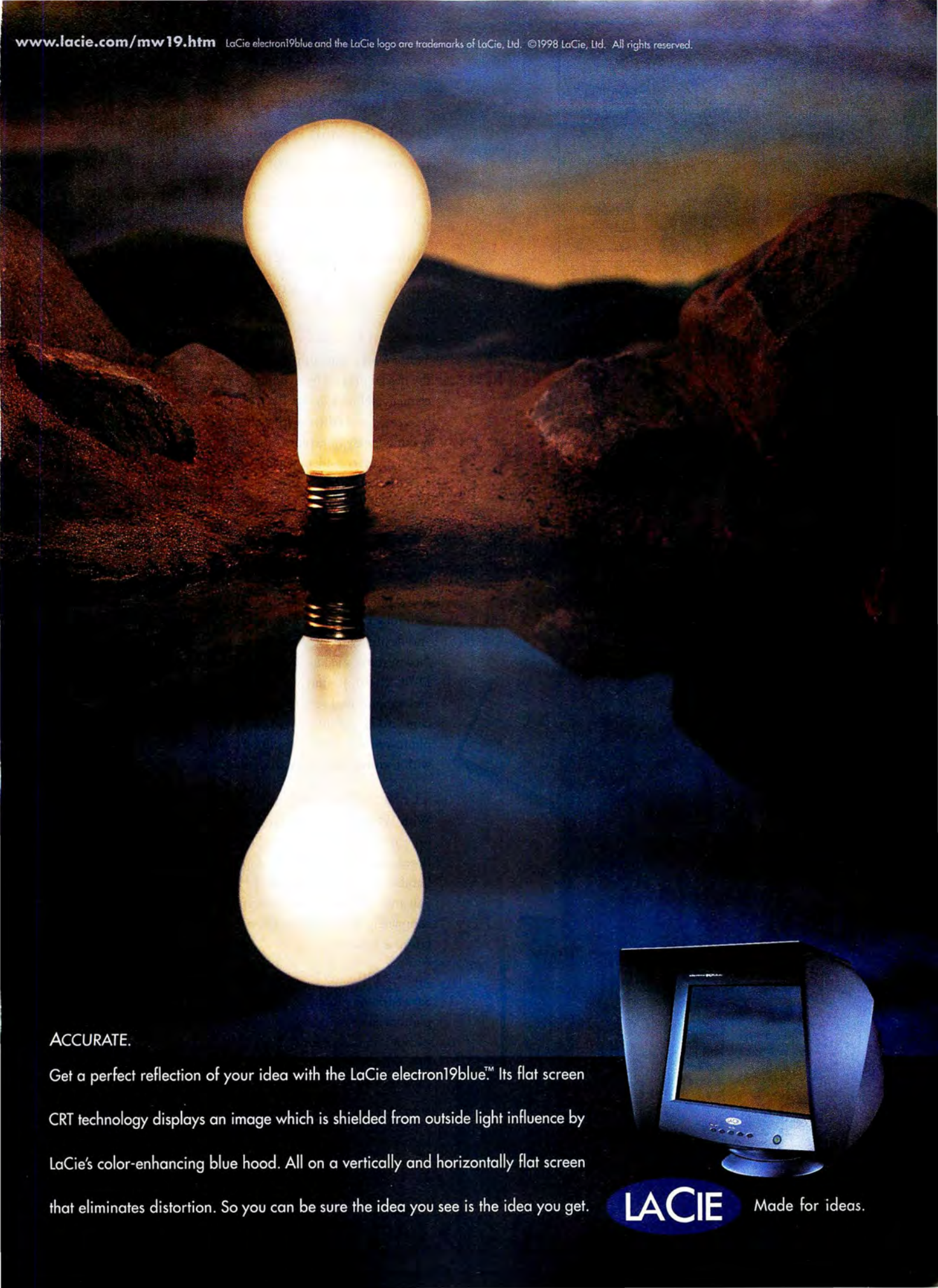
CHUCK CRIBBS
Delaware, Ohio

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CORRECTIONS

The Palm IIIe Organizer review (Reviews, *January 2000*) *incorrectly stated that the device does not support HotSync operations through the infrared (IR) port. The Palm IIIe does provide IR synchronization, but only through software Palm Computing doesn't support.* m

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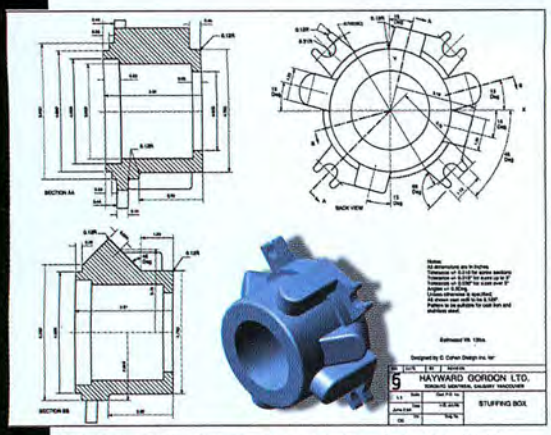


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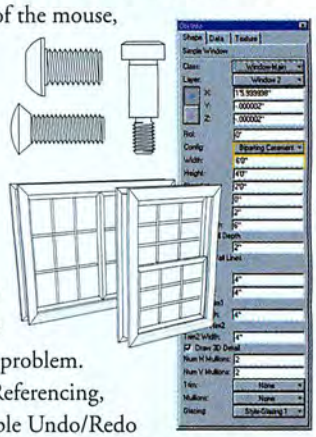
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Charles Duncan, Pty. Ltd.



Roberto Candusso, Arquitetos Associados, Sao Paulo, Brazil

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The Vision Thing

by Andrew Gore

The Secret Mac OS

WHAT HAPPENS WHEN THE INTERNET BECOMES THE OS? WE'RE ABOUT TO FIND OUT.

STEVE JOBS IS A MASTER showman. Only he could announce what amounts to a major delay in product development and turn it into a public relations coup. Remember: According to Jobs's Macworld Expo keynote address of a year ago, Mac OS X was supposed to *ship* in January 2000, not simply be announced for the third time.

After two and a half years of watching Apple's iCEO at work, I've learned it's best to always watch what Steve's other hand is doing. Because, like any good magician, he will try to draw your eyes away from the hand that's really performing the trick.

Take, for example, his announcement of new Apple.com features, especially iTools. Be assured that while Apple talks about the Internet, what it's really talking about is the Mac OS itself. Because iTools isn't meant to work without Mac OS 9. That means no other operating system can take advantage of these capabilities—they're new Web-based features of the Mac OS, not new Internet services offered by Apple. There's a difference.

The Inner Limits

Make no mistake: Apple is in the business of selling computers. That's how the company makes money. Everything Apple does is designed to enhance the possibility that you will buy a new Macintosh, rather than continue to make due with your old Mac or, worse yet, buy a PC.

What will make you buy a new Mac? For one thing, new capabilities. And for the uninitiated, those new capabilities need to be packaged in such a way that they at least seem like something Windows can't do. As Jobs himself said in the keynote, Apple is the only company left that controls both hardware and software. Managed properly, this can be an incredible competitive advantage. Just take a look at today's elegant Mac design. It's not just about the pretty colors, but about how integrated everything is.

Apple controls both the horizontal and the vertical—of that there's no doubt. The one thing the company doesn't control is the connection. To date, the Internet has escaped Apple's grasp. It's made some good tools; it's even managed to build Sherlock, an application it pitches as an Internet feature.

Enter EarthLink. Placing a $200 million stake in EarthLink is but the first step in assuring that Apple controls the on-ramp. The next logical step? Offer everyone a free EarthLink account (for some period of time, from one month to one year) when they buy a new Mac. After that, Apple will probably work to make EarthLink a one-stop shop for high-bandwidth Internet access, be it DSL, cable, or both. Then Apple can assure that even people who already have an Internet provider will switch to Apple's preferred brand.



ANTHONY RUSSO

Form and Function

What could be easier about installing an iMac? If every iMac comes with an active EarthLink account, all you'll need to do is press a button to connect to the Net. No credit cards to enter, no setup required.

Once you've ensured that new Macintosh users' first stops are EarthLink and Apple.com, what's the glue that'll keep them there?

Well, it sure isn't iCards. Apple's greeting-card creators may have a better aesthetic sense (or better stock art) than is exhibited at eGreetings.com, but that's hardly what I'd call a killer feature. Instead, I'd call iCards a not-so-veiled attempt to capture e-mail addresses. The same can be said for Apple's free e-mail system, hosted at mac.com.

No, it'll be features like iDisk that'll make Apple.com sticky. iDisk isn't a new Internet feature so much as it's an addition to the Mac OS. With iDisk, Apple is essentially giving away 20MB of network storage with every copy of Mac OS 9.

Now imagine what might be possible if other collaborative applications were added to the Mac OS via Apple.com: interactive games; multimedia chat; teleconferencing; and even more traditional applications such as word processors, spreadsheets, and presentation programs. iMac users, many of whom seldom buy software, would get cheap access to all kinds of power they'd normally never experience.

But wait—wouldn't that mean Apple would control the world of Mac software distribution (and perhaps software creation), as well as Internet access, e-mail, and even long-term data storage? That's an infrastructure that could enable—dare I even say it?—Mac-based Internet terminals and set-top boxes.

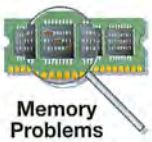
Clever, Steve. Very clever.

Don't agree with my theories? Well, send me an iCard. Meanwhile, I'll be practicing Steve Jobs's favorite card trick. You know: the one where he ends up holding all the aces. **m**

Questions? Comments? E-mail them to Andy at visionthing@macworld.com.

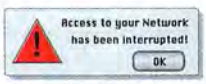
The Seven Deadly Macintosh Sins:


Software Conflicts


Memory Problems


Viruses


Hardware Problems



Network Problems


Disk Damage


Damaged Software

Salvation:



When good Macs go bad and fall from grace, it's good to know there's help nearby. Salvation is only a mouse-click away with the new TechTool Pro 3. Now featuring virus protection and conflict detection, TechTool Pro is the only program you need to help abolish the evil forces that have possessed your Macintosh. TechTool Pro 3 checks more aspects of your Macintosh than any other utility available. Period. Besides repairing and recovering damaged drives, eradicating viruses and catching the occasional software conflict; you can also test all those other critical parts of your system that other utilities simply ignore. Like RAM, logic board components, floppy drives, scanners, modems, internet connections and so much more. TechTool Pro even supports technologies like System 9.0.1, "Pure" HFS+, Firewire and USB drives, and all of the latest Macintosh models.

TechTool Pro can also help you in between times of trouble. Our disk and directory optimize features can help improve the performance of your Macintosh as well as help circumvent problems before they happen. The TechTool Protection control panel will regularly check your system so you don't have to. It will also back up critical directory data, so if something goes wrong, you'll be up and running in no time flat.

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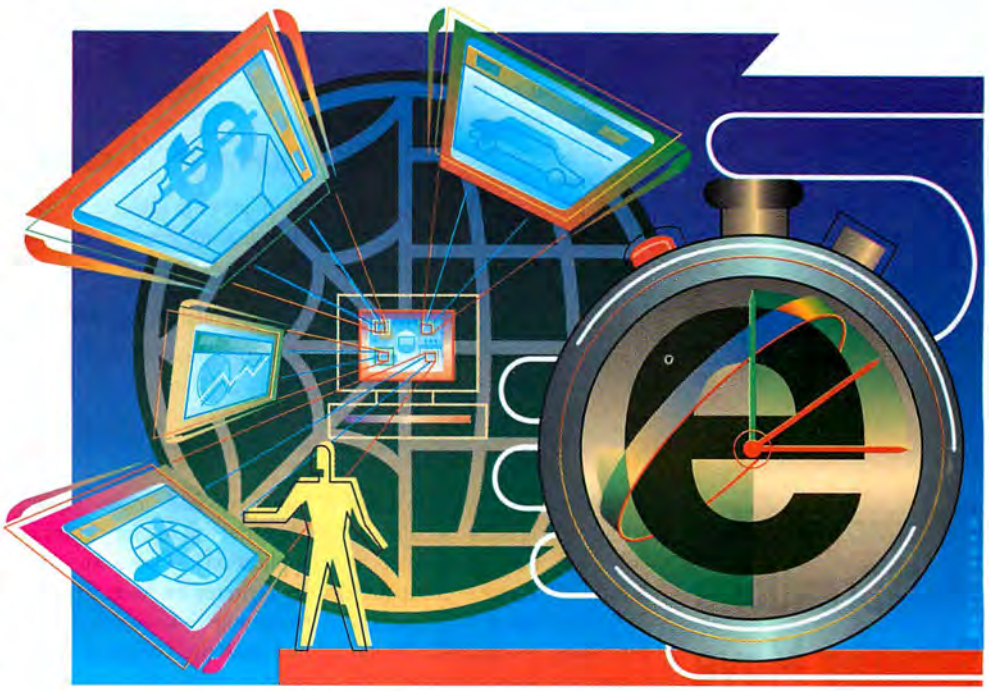
News

online

Microsoft Revs Up Internet Explorer

VERSION 5.0 PROMISES FASTER SPEEDS, MORE RELIABLE PAGE RENDERING

by Philip Michaels



HANK OSUNA

Adding new bells and whistles to software upgrades is all well and good. But when it comes to Web browsers, users want software that loads pages quickly, renders them correctly, and won't interrupt an online session with repeated crashes. Microsoft (425/882-8080, www.microsoft.com) says it emphasized these goals when forging Internet Explorer 5.0, the latest Mac version of its Web browser. Among the enhancements is a new rendering engine, code-named Tasman, that generates HTML documents about 50 percent faster than Internet Explorer 4.5's. Microsoft says this version also improves accuracy when rendering files that include Cascading Style Sheets Levels 1 and 2, HTML 4.0, and XML; pages viewed through Internet Explorer 5.0 will look exactly as the markup specifies.

Better Searches In addition to these under-the-hood improvements, Microsoft has streamlined the browser's search functions, letting you set up the results page to show only Web sites, addresses, or businesses. You can also customize which search engines you use, as well as find related links with a command in the Tools menu.

On top of the Page Holder feature introduced in Internet Explorer 4.5, the new version adds the Internet Scrapbook, a research tool that creates a permanent folder for storing Web content. You can recall stored Web pages even if their URLs change or disappear. Also new is the Media Bar, a small tool bar that lets you play multimedia content without a separate media player. Items you play with the Media Bar keep running even if you close the browser window or open new ones, making for a seamless multimedia experience.

Following Apple's iMac lead, Microsoft is also offering a choice of interface colors. Instead of viewing dialog boxes and other elements with plain gray backgrounds, you can choose from five colors that mirror the iMac's flavors.

Going Once, Going Twice One feature that could cause some controversy is the Auction Manager, which tracks online auctions in a special window, alerting you when an auction is ending or someone has outbid you. eBay, the leading online auctioneer, has sued other companies, such as AuctionWatch.com, that offer auction-tracking tools. Microsoft says Auction Manager is just an alert function that doesn't infringe on eBay's software, but at press time Microsoft hadn't discussed the issue with the online auctioneer.

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Macworld
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Best Products

Macworld Expo San Francisco 2000

ONCE AGAIN, the editors of *Macworld* have selected the hottest new products to appear at Macworld Expo.

Apple Mac OS X

Apple's (800/795-1000, www.apple.com) next-generation operating system, formally unveiled at Macworld Expo, provides the modern OS features Mac users have long clamored for, along with a slick new graphical user interface (see feature elsewhere in this issue).

Canon PowerShot S20

Canon (800/652-2666, www.usa.canon.com) has announced the first three-megapixel digital camera for the Mac. Based on the same compact design as that of the PowerShot S10, the S20 captures images at 2,048 by 1,536 pixels (see news story elsewhere in this section).

Canon BJC-85

Canon (800/652-2666, www.ccsi.canon.com) thinks small with this portable ink-jet printer, which is barely larger than a tissue box (see news story elsewhere in this section).

Creative Labs Sound Blaster Live Platinum

Creative Labs (408/428-6600, www.creative.com) marks its entry into the Mac market with its PCI audio card, which is wildly popular in the PC market. In addition to offering MIDI connections and surround sound, the card frees your Mac CPU from audio-processing tasks.

IBM ViaVoice

IBM (800/772-2227, www.ibm.com/software/speech/) wins the race with DragonSystems to deliver the first continuous–speech-recognition software for the Macintosh. It sells for $90 and is available now.

Macromedia Dreamweaver 3/FireWorks 3

Macromedia (415/252-2000, www.macromedia.com) updates its Web authoring applications



by improving integration with other leading graphics software, including Adobe Photoshop.

Microsoft Internet Explorer 5.0

Microsoft (425/882-8080, www.microsoft.com) has added numerous usability enhancements to the default Mac Web browser, including improved rendering of HTML pages, new search capabilities, and a Scrapbook feature that makes it easy to store search results (see lead news story elsewhere in this section).

MicroNet Sancube

This FireWire-based storage network from MicroNet (949/453-6100, www.micronet.com) offers up to 220GB of online hard-drive capacity with a maximum throughput of 30 MBps—all for a fraction of the cost of a fibre-channel storage network.

Zaxwerks 3D Invigorator

This Adobe After Effects plug-in from Zaxwerks (800/549-0250, www.zaxwerks.com) lets you create 3-D models, with sophisticated lighting effects, from within the host program.

graphics

MetaCreations' Strange Move

MAC USERS AWAIT WORD ON WHICH PRODUCTS WILL BE DUMPED

by Stephen Beale

Many Mac users had to be scratching their heads after MetaCreations' December 14, 1999, announcement that the company plans to sell off graphics applications that don't fit with its new focus on 3-D–visualization technologies for Web-based retailers. At press time MetaCreations wouldn't say which programs would be sold off, but given that at least 100 of the company's 250 employees will receive pink slips, it's clear that MetaCreations plans to shed a considerable chunk of its product line. MetaCreations' products include such popular graphics packages as Painter, Bryce, Poser, Canoma, and Kai's Power Tools (KPT) Adobe Photoshop plug-ins; the company recently shipped Carrara, a 3-D–modeling, –rendering, and –animation program that combines the features of Ray Dream Designer and Specular Infini-D.

A New Focus In a prepared statement, MetaCreations said that its board chose the new strategy after determining that its e-commerce initiatives had more growth potential than its graphics applications. Those initiatives are centered on MetaStream, a streaming 3-D–graphics format that the company developed in cooperation with Intel. A PC version of the MetaStream plug-in has been available since May 1998; the company finally shipped a Macintosh version last August. MetaCreations offers its MetaStream services through MetaStream.com, a division that's 20 percent owned by Computer Associates.

The move is puzzling for several reasons. MetaCreations had appeared to be getting its financial act together, following in the footsteps of Macromedia by shedding nonessential products and focusing on the professional graphics market. During the fall 1999 Seybold desktop-publishing conference, MetaCreations representatives showed a road map that called for upgrades to most of the company's key programs through much of 2000.

E-commerce Tools? Some of the company's most popular products, such as Painter and the KPT Photoshop plug-ins, appear to have limited application as e-commerce visualization tools. Yet it's hard to believe that Mark Zimmer, who has replaced Gary Lauer as MetaCreations CEO, would cut loose Painter, a program that he authored—and that recently saw its most significant upgrade in years. Just a week before the announcement, MetaCreations repre-

HANK OSUNA

sentatives were offering demonstrations of KPT 6, the first of what was supposed to be several collections of all-new Photoshop plug-ins.

MetaCreations may also find itself in a legal quagmire if it tries to sell Bryce, a popular program for generating realistic 3-D landscapes. Eric Wegner, who developed the technology behind Bryce, claims that he retains ownership of the underlying software—essentially everything but the user interface. In a message to Bryce users, Wegner said that he has the source code to Bryce 2 and will publish his own version if MetaCreations abandons the program.

3-D Web Rivals The 3-D–streaming technology in MetaStream is based on software developed by Real Time Geometry, a company that MetaTools acquired in 1996 shortly before the latter's merger with Fractal Design. The MetaStream technology uses an efficient, low-bandwidth approach to rendering 3-D graphics, making it an ideal application for the Web. However, the MetaStream format faces plenty of competition, including Web3D, a forthcoming Web standard based on the current Virtual Reality Modeling Language.

In a late-December letter to MetaCreations customers, Zimmer promised that the company would find a "complementary new home"—meaning another graphics-software developer—for its "nonstrategic" graphics, modeling, and paint programs, but he didn't specify which programs those might be.

Until a buyer is found for the programs, MetaCreations says it will continue to offer technical support and enhance the products. Adobe Systems has already said that it is not interested in taking on any of the programs. Other likely candidates are Macromedia, Quark, Corel, and Play; the latter company in particular would seem to be a good match for Bryce and Poser.

SUZANNE ROADY

systems

G4 Line Gets a Makeover

APPLE ADDS NEW LOGIC BOARD TO LOW-END CONFIGURATION

by Philip Michaels

Talk about short life spans. Apple (800/795-1000, www.apple.com), which last fall introduced a 350MHz Power Mac G4 system featuring a modified version of a G3 logic board, has abandoned that design, replacing it with the same architecture used in the company's 400MHz and 450MHz G4 systems (see *Reviews*, February 2000). The new architecture, code-named Sawtooth, boosts graphics and disk performance and adds DVD and wireless-networking capabilities.

The new 350-MHz G4 configuration—which carries the same $1,599 price as the previous one—features 64MB of RAM, a 10GB Ultra ATA hard drive, a DVD-ROM drive, dual FireWire and USB ports, and a high-speed AGP port with a Rage 128 Pro graphics controller from ATI Technologies. Prices for the 400MHz and 450MHz models remain at $2,499 and $3,499, respectively.

Faster Graphics The Rage 128 Pro, an enhanced version of the Rage 128, features faster 3-D and DVD-playback performance than its predecessor and includes built-in support for digital flat-panel displays. Apple plans to use the new controller in all new G4 systems and is offering a $99 Rage 128 Pro upgrade kit for users of current AGP-equipped systems. (Apple included AGP in its 400MHz and 450MHz systems, but the 350MHz Power Mac G4 uses a PCI slot for the graphics card.)

Other enhancements in the Sawtooth architecture include faster hard disk connections and a slot for Apple's $99 AirPort wireless-networking card; Apple plans to introduce software that will let you use AirPort-equipped Power Macs as AirPort base stations.

The additions to the G4 line come on the heels of last fall's public-relations nightmare, in which a chip shortage forced Apple to reconfigure the product line with lower-speed versions of the G4 (see *News*, January 2000).



Along with the new G4 configuration, Apple has introduced a 15-inch all-digital flat-panel LCD monitor. The $1,299 Apple Studio Display boasts a native resolution of 1,024 by 768 pixels.

online

Free Software Squeezes Mac E-Mail

A LAST-DITCH JAB AT OUTLOOK EXPRESS?

by Jason Snell

When it comes to software, there's no free ride. In December, Qualcomm (800/238-3672, www.qualcomm.com) announced it will offer a full version of its Eudora e-mail program for free, continuing a trend that began when Microsoft offered its Internet Explorer Web browser for free. In the short term, Mac users have access to powerful Internet applications they don't have to pay for. But in the long term, it's possible that only companies rich or powerful enough to give away their software will be left standing.

Light Features Eudora, originally developed at the University of Illinois, has always been available in a free version. Under the licensing agreement that allowed Qualcomm to develop a commercial version of the program, the company also had to offer a free edition, Eudora Light. Although Qualcomm has added features to Eudora Light over the years, the company has poured most of its development resources into the $50 Eudora Pro.

Now those commercial features—including enhanced filtering, message searching, an in-line spelling checker, the ability to create styled text in messages, support for the IMAP server format,

continues

Product WATCH

RIP Mac Fusion After more than a year of silence about the fate of **NetObjects Fusion** for the Mac, NetObjects (888/449-6400, www.netobjects.com) has announced it will no longer develop a Mac version of the Web-authoring program.

Musical Chairs The programs may be the same, but the names have changed. Corel (800/772-6735, www.corel.com) has acquired rights to **Ultimatte KnockOut,** a $99 masking program that works with native Adobe Photoshop files (see *Reviews,* January 1999). ScanSoft (978/977-2000, www.scansoft.com), which recently acquired the rights to MetaCreations' consumer software products, is offering **Kai's Photo Soap 2, SuperGoo,** and **Power Show** in a single $50 package known as **PhotoFactory.**

HP Support Hewlett-Packard (800/552-8500, www.hp.com) has added Mac compatibility to its **HP 2500CM Professional Series** color ink-jet printer. The printer, aimed at workgroups, includes Adobe PostScript 3 drivers.

Message Center Smith Micro Software (949/362-5800, www.smithmicro.com) has announced **HotFax MessageCenter Pro,** a voice-messaging system for the Mac. Users can manage telephone calls and voice messages, taking advantage of multiple voice mailboxes and fax-on-demand capabilities.—EDITED BY FRITH BREITZER

support for multiple e-mail accounts, and more—will be available for free. The catch? The free version will include a small (roughly 150-by-150-pixel) advertising tile that appears the entire time you're using Eudora. (Paying users won't see the ad tile, and those who don't want to pay or see the ad can choose a limited-feature mode much like the old Eudora Light.)

Why make the change? Qualcomm says it wants to "use the new business model [to] drive long-term product development." Translation: in a world where you can download Microsoft Outlook Express 5.0—a Eudora competitor that offers similar features—for free, Qualcomm must sell advertising and give its product away to fund continued software development.

Feeling the Squeeze Qualcomm may face a stiff challenge, but it stands to benefit from Eudora Light's large base of users, many of whom will no doubt switch to the ad-sponsored version. And while Qualcomm may be a small player in the software arena, it's a large telecommunications corporation with the resources to set up an ad sales system for Eudora.

Other e-mail developers don't have those advantages. Bare Bones Software, maker of the well-respected text editor BBEdit, entered the e-mail market in May 1998 with Mailsmith, a $79 program that offered unprecedented flexibility and scripting support. Though recently updated to version 1.1.5, the program has seen only limited acceptance and the company has slowed further development. Bare Bones president Rich Siegel acknowledges that free software "has distorted the marketplace so that the usual competitive dynamics no longer apply."

More to Come The news for e-mail developers will likely get worse. At Apple's Worldwide Developer Conference last May, interim CEO Steve Jobs detailed plans for an Apple-produced e-mail program, MailViewer, which Mac OS X will include. Outlook Express is currently the default Macintosh e-mail program.

printing

New Canon Hardware Thinks Small

PINT-SIZE PERIPHERALS WOO MAC USERS

by Frith Breitzer

Canon Computer Systems (800/652-2666, www.ccsi.canon.com), which proclaimed its return to the Mac market at last July's Macworld Expo New York, has beefed up its product line with a host of new space-saving USB devices, including a three-megapixel digital camera, a compact flatbed scanner, and an ink-jet printer that could almost fit inside a tissue box.



Canon's CanoScan FB 630Ui scanner (left) and BJC-85 printer

The Canon PowerShot S20, the first of what will likely be a barrage of three-megapixel cameras, uses a 3.34-megapixel CCD in the same compact body as the PowerShot S10, a two-megapixel model introduced in 1999. Scheduled to ship in March for $799 to $899, the S20 includes a 2× optical zoom and a 16MB Type II CompactFlash card.

The scanner, the CanoScan FB 630Ui, is 1.5 inches thick, with a legal-size footprint. Weighing in at 3.3 pounds, it features a USB interface and a maximum resolution of 600 by 1,200 dpi. Canon will make the $149 scanner available with lids in all five iMac flavors. It's scheduled to ship in February.

Another pint-size peripheral, the $299 BJC-85, is a 360-dpi ink-jet printer that works with Palm OS–compatible devices in addition to USB-equipped Mac systems. Similar to the Windows-only BJC-80, introduced in 1997, the BJC-85 weighs a mere 3.1 pounds and is just 2.3 inches high. Maximum print speed is 5 ppm in black and 2 ppm in color. It's expected to ship in March.

For budget-minded users who don't mind setting aside some extra desk space, Canon's BJC-3000 color printer offers 720-by-1,440-dpi resolution and maximum print speeds of 6 ppm in black and 4 ppm in color. The $99 device is expected to ship in February.

Canon has also added to its multifunction peripheral line with the MultiPass C545, which combines print, fax, copy, and scan functions. Canon says the $349 USB device, scheduled to ship in March, can make the first copy in 45 seconds and subsequent copies in half that time.

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Reviews

Multifunction Peripherals

BROTHER, CANON, AND EPSON BRING MFP DEVICES TO MAC MARKET



GIBSON

FOR YEARS, PC USERS HAVE BEEN taking advantage of multifunction peripherals (MFPs) that combine the functions of a scanner, printer, copier, and fax machine. Until recently, Macintosh users had to forgo these attempts at space-saving integration, but with Apple's resurgence, Brother, Canon, and Epson have each introduced Mac MFPs with USB interfaces. Macworld Lab looked at four MFPs, one each from Brother and Canon and two from Epson. We found that each MFP is strong in one area but weak in another.

Although they share similar components, you won't easily confuse these models. Brother's $600 MFC-8600 looks and feels like a fax machine; it's fast but limited to black-and-white scanning and printing. Canon's $379 MultiPass C635 and Epson's $349 Stylus Scan 2000, each with an integrated sheetfed scanner, look like ink-jet printers, and Epson's $449 Stylus Scan 2500, which has a flatbed scanner, resembles a photocopier. (Epson's Stylus Scan 2500 Pro, not reviewed here, adds an automatic document feeder for $100 more.)

Scanning

Among the four MFPs, only the Stylus Scan 2500 includes a flatbed scanner; the other three get by with sheetfed scanners, which are less convenient and typically offer poorer image quality. And sure enough, the Stylus Scan 2500—whose integrated scanner is based on Epson's Perfection 636U (see "Crafty Creations," December 1999)—did an excellent job of scanning color photographs. The Stylus Scan 2000's sheetfed scanner also produced surprisingly good-looking scanned images.

Canon's MultiPass C635 offers only fair scanning quality; it mildly distorted dark blues and light yellows, and images lost some detail. Don't even consider Brother's MFP as a scanner replacement: it's limited to gray-scale scanning, and images came out too dark. However, all four MFPs did a reasonable job of scanning text.

Printing

When it comes to print quality, the Epson MFPs again lead the pack. Both use the same print engine found in the Stylus Color 740 (see *Reviews*, January 1999), and the output quality is about what you'd expect from a midrange ink-jet printer. However, you'll want to print on ink-jet paper to retain crispness; when printing on

REAL PRODUCTS REAL RATINGS — Reviews you can trust: Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.
OUTSTANDING: ♦♦♦♦♦ VERY GOOD: ♦♦♦♦ GOOD: ♦♦♦ FLAWED: ♦♦ UNACCEPTABLE: ♦

plain paper, we noticed some feathering.

Canon's MultiPass produces reasonably accurate colors, but the output suffers from noticeable dithering, and the text was a bit blurry on occasion. The Brother MFC-8600 generated a decent, albeit slightly grainy, gray-scale print of our color photo.

Copying

Although the Epson MFPs share the same print engine, the Stylus Scan 2500 offers much better copy quality, despite a minor tendency to saturate colors. It reproduced text, graphics, and thin lines at least as well as a dedicated copier. The Stylus Scan 2000, on the other hand, produced visible banding and washed-out colors, and thin lines in a spreadsheet printed with slight irregularities—as they did on the Canon and Brother MFPs.

The Canon MultiPass, with an ink-jet printer limited to 360-dpi resolution, does a poor job of making color copies; it yielded oversaturated reds and tended to reproduce dark blues as purple. We also found the color-copy controls confusing: you have to press the Copy button and then the Color Copy button.

Although it's limited to black-and-white output, the Brother MFC-8600 produced reasonably good gray-scale reproductions of our original documents. One unique feature is the Sort Copy function, similar to those on dedicated copiers, for generating collated copies.

The MFC-8600 may offer limited output options, but it's clearly the speed demon when making black-and-white text copies, taking 23 seconds to produce the first copy and 5.5 seconds for each additional copy. The Epson Stylus Scan 2000 was also speedy, copying a text document in 27 seconds and a color photo in 59 seconds. The Epson Stylus Scan 2500 was the slowest at copying text documents, taking nearly 2 minutes for the first copy, but it copied color photos in a reasonably fast 3 minutes, 19 seconds. Canon's MultiPass was the slowest by far when copying photos, taking 9 minutes, 12 seconds.

Faxing

When it comes to sending and receiving faxes, the Brother MFC-8600 is the hands-down winner. With its integrated handset and fax-specific controls, it even resembles a stand-alone fax machine. Other fax amenities include built-in caller ID (assuming you have this service on your telephone line), call waiting ID, and automatic cover pages that include sender and destination information as well as four standard or two custom messages.

Although the Canon MultiPass lacks a handset, it does include a jack for connecting a telephone. Canon also provides software that lets you set the ring pattern, station ID, and number of rings before answering; Brother's MFC-8600 forces you to do this manually. Canon's software also lets you set up an address book for speed dialing, although import and export capabilities would have been a nice touch.

Epson's MFPs don't function as stand-alone fax machines; instead, you have to run software on your computer, much as if you were sending or receiving a fax directly on your Mac.

All four devices produced decent-looking faxes on the sending and receiving end. We saw some jagged lines in a spreadsheet, but the quality was no worse than you'd get with a dedicated fax machine. The Epson MFPs produced the best-looking gray-scale photos, but the Stylus Scan 2000 added slight distortions along one edge.

Software

All four units include print drivers for output and TWAIN plug-ins for scanning into Adobe Photoshop or PhotoDeluxe; Canon and Epson also include a bundled copy of PhotoDeluxe, and Canon adds Scansoft's Textbridge Professional OCR software.

We tested the Epson MFPs with Newsoft's Presto PageManager, a Mac-based software control center bundled with each Epson unit. PageManager is designed to provide seamless integration among the MFP functions and other Mac applications, but it's hard to use. At press time, Epson was planning to replace it with a program called Smartpanel, but we didn't have an opportunity to look at the new software. Users who have already purchased a Stylus Scan model with the older software can request a free copy of Smartpanel.

Although Mac-based MFP hardware is finally available, Mac users still get short shrift when it comes to MFP software. For example, Brother's Windows software prints your e-mail and stores incoming faxes on the computer's hard disk. The PC software also lets you take advantage of a video-capture port on the MFP; Mac users can't use the video-capture function because the Mac software doesn't support it.

Macworld's Buying Advice

MFPs are convenient and save lots of desk space, but they won't save you any money; you'll pay about the same—or less—for a separate scanner and printer. If you're primarily looking for a fax machine that can double as a scanner, printer, and copier—and you can live with monochrome output—the bulky Brother MFC-8600 offers business-class faxing capabilities. To receive faxes anytime without sacrificing desk space, consider the Canon MultiPass C635. If image quality is paramount and you don't mind using your computer for faxing, consider the Epson models: the Stylus Scan 2500 provides exceptional scan, print, and fax quality; the Stylus Scan 2000 trades some of this for a smaller footprint. However, if you're just looking for a scanner and printer, you're better off with stand-alone devices rather than an MFP.—KEVIN MITCHELL

Jacks of All Trades?

Company	Product	Mouse Rating	Company's Estimated Price	Contact	Pros	Cons
Brother International	MFC-8600	♦♦♦	$600	800/276-7746 www.brother.com	Fast; strong fax features.	Black and white only; mediocre image quality.
Canon Computer Systems	MultiPass C635	♦♦♦	$379	800/652-2666 www.ccsi.canon.com	Compact.	Slow copy speed; confusing hardware controls.
Epson America	Stylus Scan 2000	♦♦♦	$349	800/463-7766 www.epson.com	Good scan quality; great print quality.	No stand-alone fax; poor copy quality.
	Stylus Scan 2500	♦♦♦	$449	800/463-7766 www.epson.com	Great scan and print quality; flatbed scanner.	No stand-alone fax; bulky.

Deneba Canvas 7.0

INTEGRATED GRAPHICS SOFTWARE OFFERS EVERYTHING BUT THE KITCHEN SINK

EVERY TIME DENEBA SOFTWARE releases a new version of Canvas, the same thing happens—the company stuffs gobs and gobs of features into the already jam-packed program, and the user is left to sort them all out. Canvas 7.0 is no different. Deneba has made a huge number of changes in the latest version of its integrated page-layout, illustration, presentation, and Web-design package, and the company has introduced SpriteEffects, an excellent filtering technology that even Adobe Photoshop users will envy. The problem is, Canvas is trying to be so many things to so many users that it's starting to lose its focus.

Jack of All Trades

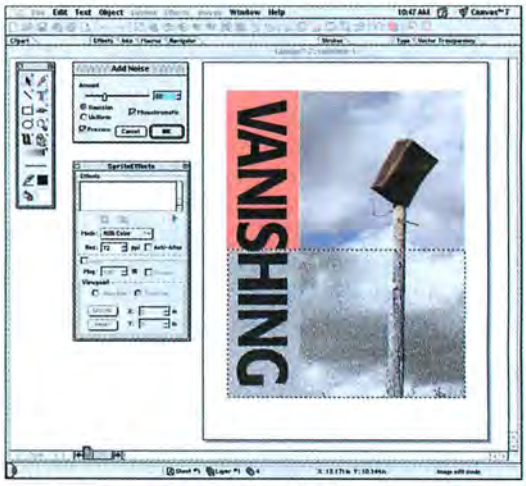
Canvas provides the same tools—with slightly different interfaces—for each of its many functions. For example, if you're working on an illustration—either vector- or pixel-based—the program presents you with an interface that resembles a cross between Photoshop and Adobe Illustrator; if you're working on a desktop-publishing project, you'll get an interface that owes much to Adobe PageMaker; and for presentations, you'll see something akin to Microsoft PowerPoint. But no matter what type of document you're working on, all of Canvas's tools are available and function as they should.

Although this approach is an effective way to integrate a lot of functionality, it results in an often clumsy and bulky interface. Canvas has some good organizational features—you can, for example, dock any dialog box on a special docking bar—but you'll frequently find yourself digging deep into nested submenus, dialog boxes, and palettes. It will take some time for new users to learn where everything is.

SpriteEffects

SpriteEffects filters, Canvas 7's most impressive new features, let you add multiple parametric effects to images. While Photoshop lets you apply image-processing and special-effects filters to bitmapped images, Canvas lets you apply its SpriteEffects filters to both bitmapped and vector-based images. Canvas also lets you go back at any time and remove a filter, change a filter's settings, or reorder effects.

You attach a SpriteEffects filter to an object from either the Object menu or the SpriteEffects palette. The SpriteEffects palette includes standard filters, such as blurs, noise, and color and level adjustments, as well as a few stylized filters, such as Emboss and Trace Contour.



Fun with Filters Canvas 7.0's SpriteEffects Lens tool lets you apply parametric filter effects simultaneously to multiple objects, which can be either bitmapped or vector-based.

You can also apply SpriteEffects filters through *lenses*, which let you apply a filter simultaneously to multiple objects of different types. For example, if you've got a vector object, such as text, stacked atop a bitmapped picture and you want to add noise to the whole image, you can simply set a noise lens on top of the entire stack.

You create a lens from a vector outline: just draw a shape, select it, and then choose Convert To Lens from the Object menu. You can then apply a SpriteEffects filter to it, just as you would to any other object. Move the lens around, and its SpriteEffect is applied to everything underneath it.

Canvas 7's SpriteEffects technology is a great idea that's long overdue—in any program—and Deneba has done a very good job of implementing it. However, we wish the Lens tool supported feathered edges for softer effects, and gradient fills for creating fades.

Moving Canvas

As if Canvas didn't already have enough document types, Deneba has added another one: the new Animation document, for creating simple animated GIFs. Each page of an Animation document represents a separate frame of an animation. Although this animation feature is pretty bare-bones, you do get an onion-skinning feature and a unique Disperse command that lets you draw a number of frames on one page and then automatically move them to separate frames.

Canvas's GIF export provides full control over looping and background transparency, but the program cannot play animations—an odd omission. Overall, the animation tools perform passably for quick and simple animations; for serious work, you'll want a more powerful tool.

Canvas's new Web wizard provides an export dialog box similar to Adobe ImageReady's. A number of thumbnails can be displayed side by side, each with separate compression settings. Unlike ImageReady, however, Canvas does not estimate download times.

Canvas can now export any type of document as HTML. Unfortunately, this feature frequently failed during our tests, producing documents with extreme layout problems. If you want to do HTML work, you're better off picking a dedicated HTML package.

And the List Goes On

The rest of Canvas's modules have seen a number of improvements and upgrades. Although the painting tools are mostly the same, the program's illustration tools have been augmented with new CAD-like snapping features, including tangent, parallel, and vanishing-point snaps.

The Auto Curve tool is a new type of pen tool that lets you create curves

without fussing with control points and handles (3-D–graphics users will recognize this tool as a natural-spline tool). With the Auto Curve tool, you simply click on certain points, to which Canvas fits a natural curve. A curve created with this tool requires many more points than a Bézier path of the same shape, but because you only have to click on points, you can usually create a path much more quickly this way than with the program's standard pen tool.

The new Reshape tool provides powerful new editing features for reshaping an existing path. You can reshape all or part of a path simply by drawing a new path or path segment. If you're used to editing paths with their control handles, it's easy to forget about this type of tool, but even experienced Canvas users should familiarize themselves with the Reshape tool.

For further editing control, Canvas 7's new Push tool lets you edit a path by pushing on the segment you want to change. The program automatically generates the necessary points and handles to create the new shape.

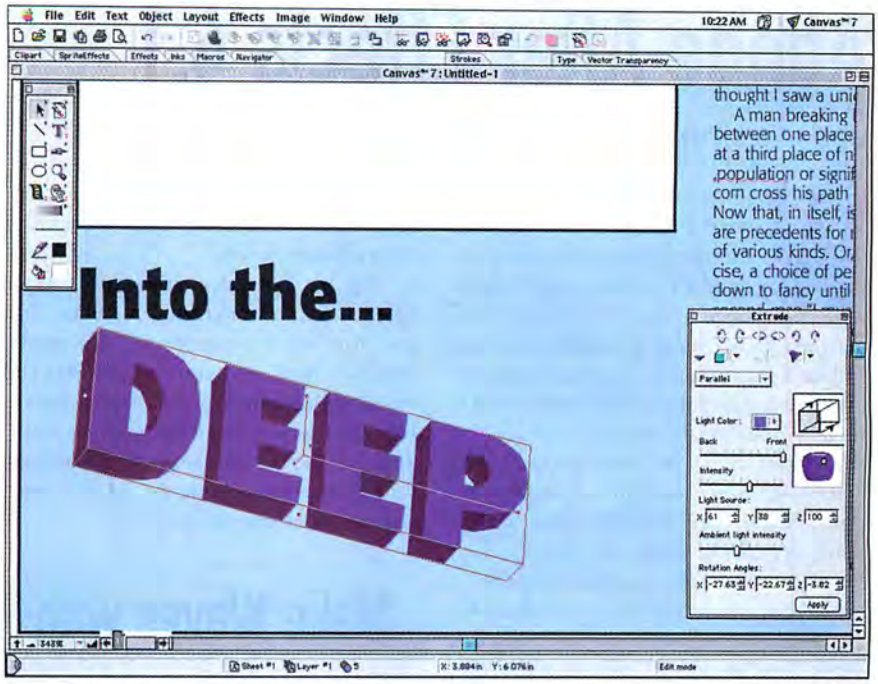
Canvas has many other new illustration features. The Reduce Points command simplifies complex Bézier paths by decreasing the number of control points. The Fit Bézier command converts polygons into Bézier paths, letting you create complex illustrations from simple shapes.

Finally, the new Path To Selection and Selection To Path commands let you use any vector path to select a portion of a bitmap. This is similar to using Photoshop's pen tool to make selections, but Canvas lets you use its entire vector arsenal to create a selection. Functions like these make Canvas's integrated vector-and-bitmap environment more than just a convenient way to prevent application switching.

Well, Extruuuude Me!

Canvas 5.0 introduced a QuickDraw 3D–based extrusion palette for creating 3-D primitives and renderings. Version 7 greatly improves on this feature by using its own extrusion engine instead of QuickDraw 3D.

As in a dedicated 3-D program, you begin an extrusion by drawing a 2-D profile using Canvas's vector tools. Canvas's Extrude palette offers three 3-D operations: Extrude, Lathe, and Sweep.



Shiny, Plastic Letters Canvas 7.0's revamped Extrude palette provides more lighting options and very basic lathing and sweeping controls, but no texture-mapping options.

Except for simple lighting controls, Canvas provides little in the way of options and variations on these basic processes. For example, there are no bevel controls for extruded objects.

In addition, the program offers no texture-mapping options, so you're basically stuck creating shiny, plastic-looking 3-D primitives. These tools are fine for creating 3-D text and very simple 3-D shapes, but for anything else, you'll need a dedicated 3-D package or plug-in.

Performance and Output

Canvas is not the speediest graphics program. Its filters are slower than their Photoshop equivalents, and very large bitmap files can noticeably hinder the performance of the entire application.

Fortunately, Deneba has fixed many of the import and export troubles we found in version 6. We imported a number of large and small files in various formats, and aside from a slowdown in performance, the program worked fine. Although we were unable to test Canvas 7 on a four-color offset print job, the output we did produce with the program was very good.

While Canvas's performance is OK for smaller jobs, high-end–graphics users will probably find it too slow. But if you decide to try out Canvas on a large print job, make sure your service bureau can accept Canvas files.

Macworld's Buying Advice

A few years back, it was difficult for many Mac users to keep several RAM-hungry applications, such as Adobe Photoshop and PageMaker, open at the same time. But because today's Macs are so speedy and come with plenty of RAM, switching between open applications is no longer a problem. This, combined with the fact that most modern programs can easily exchange data, makes an integrated package like Canvas something of an anachronism.

However, Canvas has some fine drawing, painting, and page-layout tools, and its excellent new SpriteEffects features are well implemented. We'd like to see Deneba concentrate on these items and stop trying to expand the program with underpowered Web-development, 3-D, and animation tools. If you're looking for one program to provide tools for all your graphics needs, keep looking. But if you're a midrange user in need of a decent painting and illustration application, Canvas 7.0 is a fine choice.—BEN LONG

RATING: ♦♦♦♦ **PROS:** Excellent new SpriteEffects technology; very good drawing and painting tools. **CONS:** Overcrowded interface; buggy HTML features; some slow performance. **COMPANY:** Deneba Software (305/596-5644, www.deneba.com). **LIST PRICE:** $375.

Adobe After Effects 4.1

UPDATE BRINGS PRODUCTIVITY ENHANCEMENTS

WITHIN THE MYSTERIOUS world of software version numbering, a point-one upgrade implies only minor improvements: somewhere between fixing typos in a dialog box and adding a feature only 12 people will ever use. That's why Adobe After Effects 4.1 is such a delightful surprise. Adobe has added dozens of enhancements to its motion-graphics and video-compositing powerhouse (see *Reviews*, May 1999). Some are major, many are minor; taken together, they make a terrific upgrade.

Like previous versions, After Effects 4.1 is available in two flavors: the $699 Standard Version and the $1,499 Production Bundle, which adds features aimed at broadcast and film professionals. (The Production Bundle still uses an ADB hardware key for copy protection, though the box contains a coupon for a free USB key.) Both versions include most of After Effects 4.1's new features; one exception is a set of 3-D filters in the Production Bundle that can add fog, depth-of-field blur, and other effects.

Many of the update's additions are simple productivity boosters, such as a new flowchart view that depicts a composition's structure graphically, making it easier to decipher complex projects. A new set of Favorites commands lets you save and reapply frequently used effects filters. A new keyframe assistant makes it easier to rearrange clips into simple sequences.

The update also broadens the array of media you can import and export. After Effects 4.1 can import gargantuan images as large as 30,000 by 30,000 pixels, compared with 4,000 by 4,000 in version 4.0. This not only enables you to import and then pan across much larger images but also lets you work in exotic film formats such as Imax, which has frames measuring 4,096 by 3,002 pixels.

After Effects 4.1 can import a wider range of 3-D files, including Softimage PIC and RLA formats. Because the new version supports QuickTime 4's export components, you can export projects directly to DV streams, AVI movies, various audio formats, and streaming QuickTime movies.

Adobe has also improved After Effects' text and masking features. You can now apply separate fill and stroke effects to text, and you can animate the stroke effect, making it easy to create text that writes itself onto the screen. You can also animate mask transparency, fading masked elements in and out, among other effects.

Macworld's Buying Advice

After Effects has long been the benchmark motion graphics program for the Mac OS, and version 4.1 only strengthens that position. Don't let Adobe's conservative version numbering fool you; After Effects 4.1 packs enough goodies to make it a must-have upgrade.—JIM HEID

RATING: ♦♦♦♦ **PROS:** Broad array of productivity and effects enhancements. **CONS:** Production Bundle uses hardware copy protection. **COMPANY:** Adobe Systems (408/536-6000, www.adobe.com). **LIST PRICE:** Standard Version, $699; Production Bundle, $1,499; upgrade from 4.0, $49.95; upgrade from After Effects 3.0, $299.

Make Waves with Psunami

ATOMIC POWER'S PSUNAMI is a new plug-in that generates astonishingly realistic ocean and water scenes. Psunami has been available for high-end 3-D workstations for some time; indeed, it has created effects for such aqueous productions as *Titanic* and *Waterworld*. The After Effects version uses the same physics-based rendering technology.



Sea Here Psunami's image-mapping features enable you to place color or gray-scale images on, above, or below the ocean's surface.

Psunami generates open seas—it can't create breaking waves or foam. An intimidating array of controls lets you specify and animate lighting conditions, camera position (view the waves from high above, at sea level, underwater, or anywhere in between), wave conditions (animate wind speed and direction), ocean optics (change the water's color and index of refraction), and more.

You can also apply as many as three image maps to create effects such as a logo rippling on the surface (see "Sea Here"). And you can specify that your virtual camera bob along with the waves.

Because Psunami's dozens of parameters may daunt users, the program provides dozens of presets you can summon with a mouse click. These are great starting points for creating your own oceans.

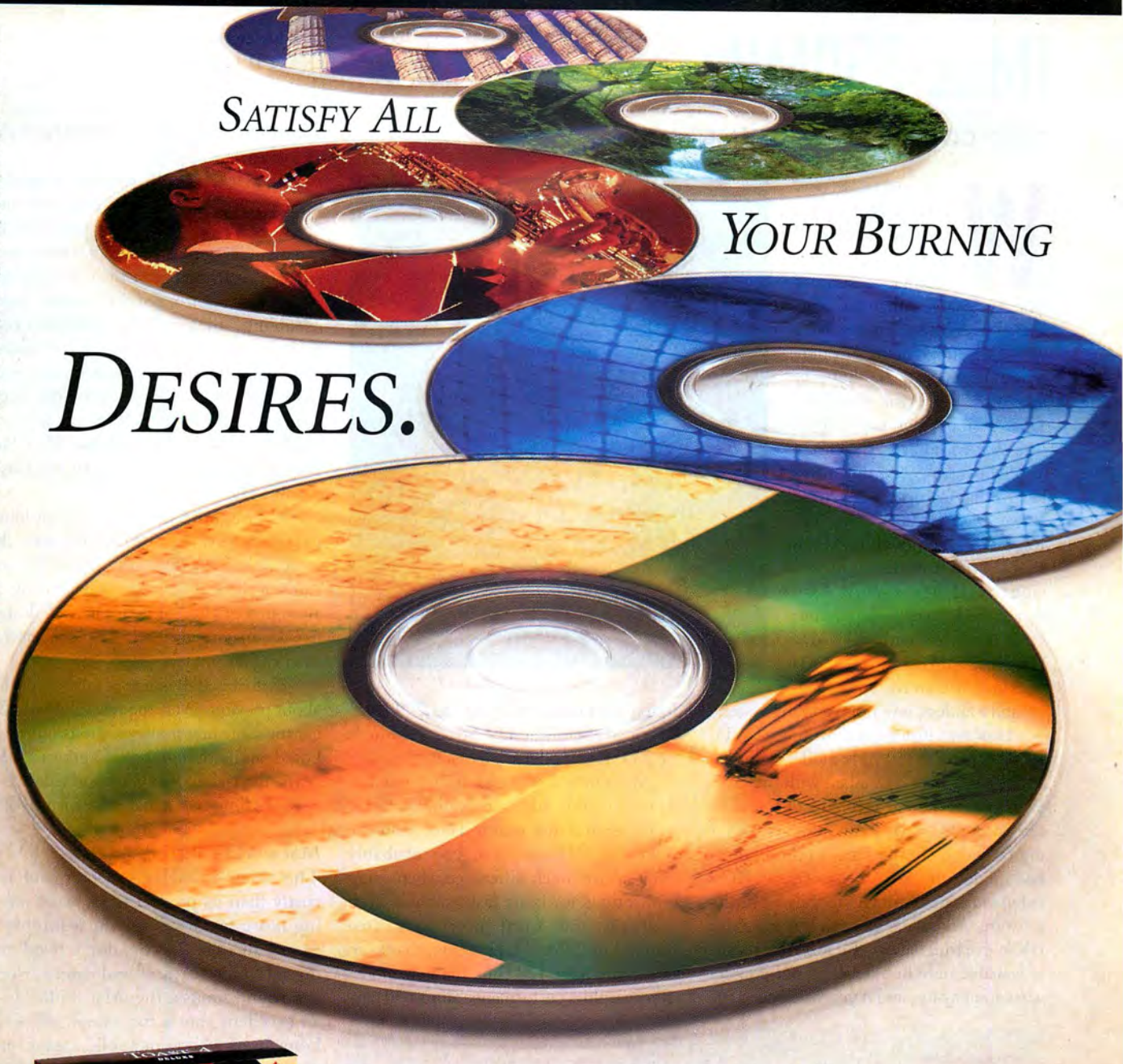
Psunami offers only a few sky controls. You can add haze and rainbows, but you can't, for example, create clouds that reflect in the water. We're hopeful that a future Psunami release will better support the heavens.

Macworld's Buying Advice At $599, Psunami is among the costlier After Effects plug-ins. If you're still building your After Effects plug-in library, you'll want to first invest in general-purpose plug-ins, such as MetaCreations' Final Effects Complete. But if you need water scenes, get Psunami. It's a one-trick pony, but it performs that trick exceptionally well.—JIM HEID

RATING: ♦♦♦½ **PROS:** Stunning realism; convenient presets. **CONS:** Limited sky options; pricey. **COMPANY:** Atomic Power (760/516-9000, www.atomicpower.com). **LIST PRICE:** $599.

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iMac 350MHz

COST-CONSCIOUS CONSUMER MAC



ARNOLD TIOSEJO

WITH APPLE'S NEW iMac lineup, you can now purchase a faster—and better-looking—consumer Mac for $300 less than the original. But while the new iMac 350MHz offers plenty of value, many users will be happier spending more for the iMac DV's digital-video capabilities (see *Reviews*, February 2000).

Selling for $999, the entry-level iMac features a 350MHz PowerPC G3 CPU, an ATI Rage 128 graphics chip, 64MB of RAM (up from 32MB in previous versions), a 6GB hard drive, and two independent USB ports. As with the iMac DV, the 350MHz model sports built-in Harman Kardon speakers and a fanless, low-noise cooling system.

However, instead of providing a DVD-ROM drive, the 350MHz model features a 24X CD-ROM drive, albeit with the same elegant slot-loaded mechanism found in the iMac DV. Also missing are other digital-video components in the higher-end models: no FireWire ports, no RGB video-out, and no iMovie video-editing software. And while you can buy the iMac DV in five fruit flavors, the 350MHz model is available only in blueberry. But you get what you pay for, and if you don't need the digital-video features in the $1,299 iMac DV or $1,499 iMac DV Special Edition, the 350MHz model is a bargain.

Macworld Lab tests show that the iMac 350MHz offers marginally faster processor and disk performance than the older, 333MHz models; you probably won't notice much difference when using applications for basic tasks such as Web browsing and word processing (see "Entry-Level iMac"). However, thanks in part to the Rage 128 chip, the new model offers graphics performance almost 70 percent faster than its predecessor's. In our Quake II test, the iMac 350MHz raced along at 36 frames per second, about the same rate as the iMac DV (which features a 400MHz CPU) and more than twice the rate of earlier models.

The iMac's 64MB RAM allocation is sufficient for running most consumer and business applications, but if you need to run memory-intensive graphics programs, you can easily add extra memory through a slot on the bottom of the machine. Like its siblings, the new iMac includes a real reset button, instead of the old paper clip–operated one, and the awkward cover over the connection ports has been removed. Add a $99 AirPort card for each machine—with or without the $299 AirPort Base Station—and you've got a reasonably fast wireless network.

Although it's available only in blueberry, the iMac 350MHz features the same tinted chassis as the iMac DV; you can see the CRT and internal wiring. It also shares the same industrial-design tweaks, making it nearly one inch shorter than earlier models.

Unfortunately, some of our complaints about previous iMac models still hold. You get the same unergonomic mouse and keyboard, and although you do get two USB ports, the lack of FireWire and video connections limits the machine's expandability.

Macworld's Buying Advice

The iMac 350MHz is faster and less costly than its predecessors, while offering more memory and much-improved sound quality. If you don't need the digital-video features and can overlook the round mouse, the iMac 350MHz is an excellent choice for school, office, or home users who want a solid, easy-to-use computer for running common home or office applications. It's an especially economical choice if you want to run a network of iMacs connected to Apple's Mac OS X Server. However, you may find that the extra features in the iMac DV and iMac DV Special Edition are worth the extra $300 to $500 outlay.—FRITH BREITZER

RATING: ♦♦♦♦ **PROS:** Affordable; more memory and better sound quality than previous version. **CONS:** Limited expansion; unergonomic mouse and keyboard. **COMPANY:** Apple Computer (800/795-1000, www.apple.com). **COMPANY'S ESTIMATED PRICE:** $999.

Macworld LAB TEST

Entry-Level iMac

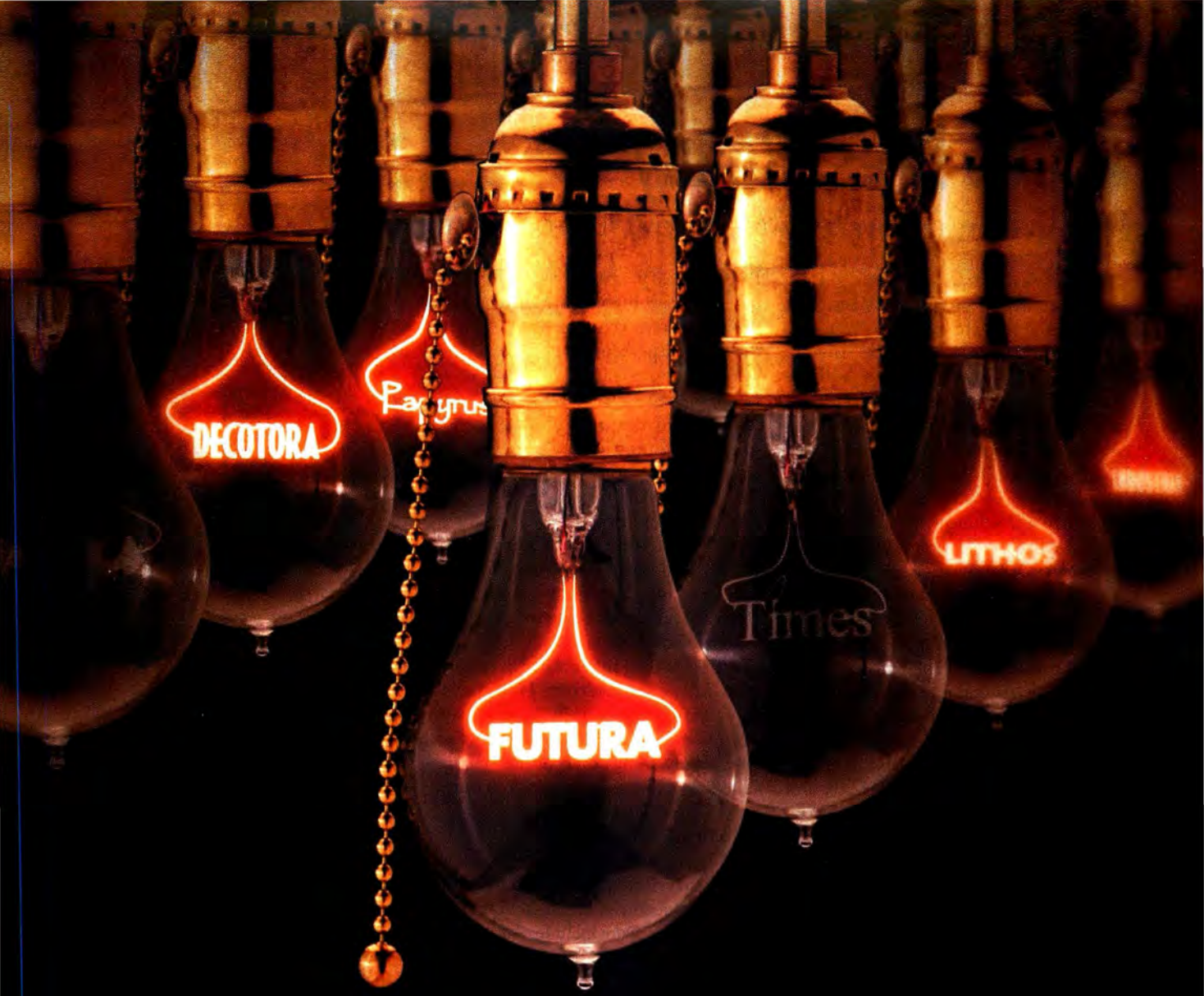
Best results in red. *Reference systems in italics.* MacBench 5.0 scores are relative to those of a first-generation Power Mac G3/300, which is assigned a score of 1,000 in each test.

	MACBENCH 5.0			QUAKE II
	Processor	Disk	Graphics	Frames per Second
Apple iMac 350MHz	1,001	1,479	2,404	36
Apple iMac DV 400MHz	*1,132*	*1,594*	*2,565*	*37*
Apple iMac 333MHz	*948*	*1,306*	*1,426*	*17*
Apple Power Macintosh G3 400MHz	*1,314*	*1,398*	*2,859*	*46*

Longer bars are better.

Behind Our Tests

For MacBench tests, we ran the systems with Mac OS 8.6, 64MB of RAM, a 2MB system disk cache, and virtual memory disabled. We tested Quake II with 128MB of RAM in all systems.—**Macworld Lab testing supervised by Gil Loyola**



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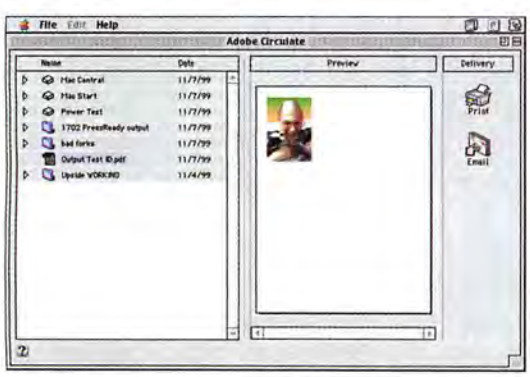
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Adobe PressReady

EXPENSIVE UTILITY OFFERS FAITHFUL OUTPUT FOR SOME PRINTERS

PROFESSIONAL GRAPHICS AND publishing programs, Macs, and ink-jet printers haven't been the best of friends, due to the printers' nearly universal lack of built-in PostScript capability. You need a PostScript printer if you want to produce EPS files from Adobe Illustrator, Macromedia FreeHand, or QuarkXPress—and Adobe's new InDesign software won't print on anything other than a PostScript Level 2 or PostScript 3 device. Many graphics pros have also found that inexpensive ink-jet printers often fail to reproduce colors accurately.

That's where Adobe's new, $249 PressReady 1.0 comes in. Combining a PostScript 3 translator and color-management functions, it lets you use almost any Mac program to produce color-accurate PostScript output on several non-PostScript ink-jet printers: the Canon BJC-8500; the Epson Stylus Color 800, 850, 1520, and 3000; and the Hewlett-Packard 895C, DeskJet 1120C, and 2000C. The program does what it promises, but it's seriously overpriced and works with a limited range of printers. Adobe says PressReady will support other, unspecified printers via future downloadable updates.



Poor Circulation The Circulate utility lets you print and e-mail PDF files, but it has some serious limitations.

Better Output

Using PressReady is simple: just select the PressReady driver in the Chooser (as you'd select any printer driver). We tested the software with an Epson Stylus Color 850, printing photos with PressReady and with the native print driver, and then comparing both prints to the original image. We found that PressReady does indeed create higher-fidelity output. While the native Epson output was more saturated, the colors were less true to the original, flattening out detail and gradations. The PressReady output's tone and detail were much truer to the original image's.



A Subtler Image Although the output from the native Epson driver (left) is more colorful and dramatic, it's less true to the original image's (middle) tones and texture. The PressReady-generated output (right) more closely matches the colors in the original.

Although PressReady does produce better-looking output, printing takes longer with PressReady than with a native driver. However, the time difference varied widely; some images took twice as long to print with PressReady, while others printed nearly as fast as they did with the native driver.

Adobe's Extras

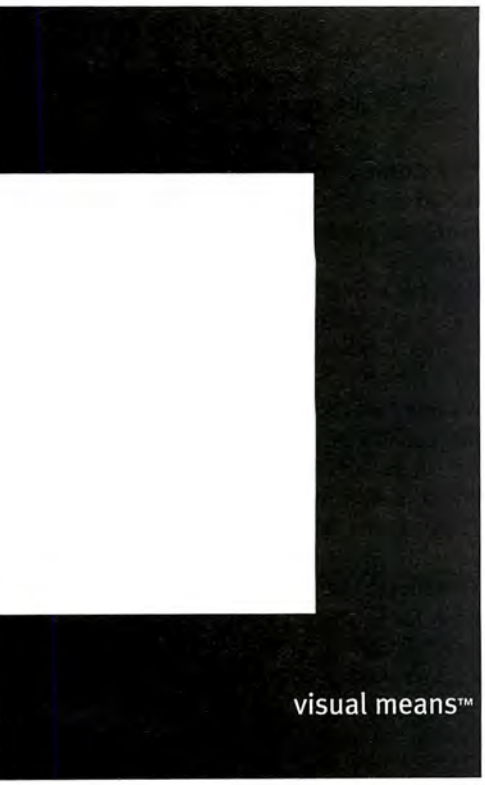
PressReady does more than let you print—and that's actually a problem, because the added features needlessly inflate the price. The package includes Adobe Acrobat Distiller 4 software, which allows you to generate a PDF file directly from the Print dialog box when using the PressReady driver. However, this option, accessed through the Printer pop-up menu, is easy to miss, and Adobe's own PageMaker software can't take advantage of the feature because its Print dialog box doesn't let you change printers.

Another utility, Circulate, lets you navigate your hard drive and select one or more PDF files to print or e-mail (see "Poor Circulation"), but it's very limited. For example, if you want to print a file, the program launches Acrobat Reader, and you print from there. However, you can do this easily enough yourself by double-clicking on a PDF file in the Finder. Circulate can also attach selected PDF files to an e-mail message, but it doesn't work with Microsoft Outlook Express 4.5. The PressReady package additionally includes Adobe Type Manager 4.51, a $100 font-management utility.

Macworld's Buying Advice

PressReady is a disappointment. The core PostScript driver works just fine, and it would be a wonderful $50 product. But Adobe added the other features with little thought for real integration, and they puff up the price to an exorbitant $250. Most users would be better off sticking with their printers' native drivers or considering the $99 StyleScript 3.8 (★★★; *Reviews*, August 1998), a PostScript interpreter from Infowave (604/473-3600, www.infowave.com) that supports 22 printers from Apple, Canon, Epson, and Hewlett-Packard. However, you'll need PressReady if you want to produce PostScript output on Epson's Stylus Color 850, which StyleScript does not support. And because PressReady supports PostScript 3, it is indispensable if you want to take advantage of the PostScript 3 features in Adobe InDesign; StyleScript supports only PostScript Level 2. Adobe needs to rethink the value of PressReady and reprice the product accordingly.—GALEN GRUMAN

RATING: ★★½ **PROS:** Provides high-fidelity PostScript output on non-PostScript printers; easy to use for printing. **CONS:** Expensive; supports a limited number of printers; Circulate utility does very little. **COMPANY:** Adobe Systems (800/323-1722, www.adobe.com). **LIST PRICE:** $249.



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DenebaCAD 2.0

SUPERFAST DRAFTING AND MODELING

THE "POINT OF SALE" IN ARCHITectural design is the moment when the client is suitably dazzled. For modern architects, that moment typically arrives via a QuickTime movie tour of a new structure. DenebaCAD 2.0, Deneba Software's 2-D/3-D CAD application, is optimally designed for this purpose—it renders so quickly that even a humble iMac can produce a series of on-the-fly building walk-throughs for a client. Five years ago, this feat wasn't even a delirious dream for Mac users.

DenebaCAD blends basic 2-D blueprint drafting with high-end 3-D modeling and rendering. In version 2.0, Deneba has polished the rough edges of its previous version, updated formats for AutoCAD 2000 compatibility, and improved lighting effects. DenebaCAD has moved to the head of the class.

The interface has three modes: Draft resembles a standard 2-D drafting program; Sculpt lets you construct 3-D objects directly or create them by extruding or otherwise manipulating 2-D objects; and Render lets you add lighting effects and make surfaces realistic (see "Material World"). The context-sensitive menus and tool bars keep the screen blessedly uncluttered.

Designers more accustomed to 2-D will find transferring their design skills to the 3-D environment fairly straightforward. DenebaCAD also lets you work in the other direction: modeling fans can work directly in 3-D and then generate sets of 2-D drawings from their 3-D objects. Although 2-D drawings usually require further detailing (such as electric outlets or small hardware fixtures), DenebaCAD's automatic options alleviate much of the difficulty.

DenebaCAD displays all the surface reflections, transparency, lighting effects, and other photo-realistic details you need for professional architectural design. For example, intuitive lighting controls make it easy to produce simple shadows, as well as ones seen through a transparent section. Lighting effects include not only external sun control but also simple spotlights, parallel light settings, and uniform planar lights for interiors.

Whether you're watching DenebaCAD generate a tour through a 3-D model's wire-frame rendering or produce a stereoscopic 3-D blue-red QuickTime movie (which you view with the included stereo glasses), the program's speed is impressive. In fact, DenebaCAD 2.0's performance—for rendering and generating QuickTime and QuickTime VR movies—is so speedy that it feels like you're using a new program. That's not far off the mark, either. While Deneba ported version 1.5's code from Windows, version 2.0's is fully optimized and refined for the Macintosh. The company has also fixed glitches in library management and file handling related to DenebaCAD's Windows origin. (We wish, however, that Deneba had also expanded the libraries.)



Material World DenebaCAD 2.0's Material Editor provides simple but detailed control over a material's surface appearance.

Architects who use CAD on a Mac have long worked in the shadow of AutoCAD 2000, the Windows-only program that defines compatibility standards in the CAD world. Fortunately, Deneba paid attention to file-exchange issues. As expected, DenebaCAD supports Autodesk release 14.01 standards for DXF and DWG files. But in our tests, it also correctly imported every 3-D object in a large AutoCAD 2000 file and exported to AutoCAD a set of Deneba sample files modified to introduce potential problems. That's the best translation performance we've seen from a CAD program since 3-D files became ubiquitous. DenebaCAD also produces DWF files (AutoCAD Web format) and supports standard file types such as CGM (Computer Graphics Metafile), IGES (Initial Graphics Exchange Specification), EPS, TIFF, and JPEG.

The Competitive Landscape

A half dozen Mac programs can handle both 2-D and 3-D CAD and produce impressive photo-realistic walk-throughs. But unlike architectural CAD applications such as GraphiSoft's ArchiCAD, Ashlar's Vellum Solids, and others ranging in price up to $4,000, DenebaCAD 2 lists for $800, making it an attractive alternative for students, new design firms, and users for whom CAD is a secondary function. (Competitive upgrades are $329, and Deneba even accepts ClarisCAD in the upgrade program.) Another attraction: DenebaCAD 2 runs on any Power Mac with 32MB of RAM, although 64MB is preferable. And the program requires only a simple password, not a hardware dongle.

Advances in the computing world over the last few years have improved DenebaCAD's chances for success. When we reviewed version 1.5, we were disappointed that it lacked a built-in materials spreadsheet, such as the one in Diehl Graphsoft's VectorWorks. Version 2, however, lets you export materials fields to Microsoft Excel as tabbed text files, based on drawing descriptions. Given the current scope of Excel's functions, this is a reasonable alternative. For instance, if you're working on a collaborative project, you can post a DenebaCAD DWF file to the Web along with the materials list as an Excel-based Web page.

DenebaCAD's lack of a scripting language no longer poses a problem either. Today's processors deal with complex objects at lightning-fast speeds, negating the need for such languages.

Macworld's Buying Advice

DenebaCAD 2.0 has muscled its way into a place where its only real direct competitor in terms of features is ArchiCAD, which costs five times as much and takes much longer to master. Deneba Software deserves considerable credit for investing the resources to put DenebaCAD in the top rank of Mac CAD programs.—CHARLES SEITER

RATING: ★★★★½ **PROS:** Very fast rendering; intuitive interface; excellent AutoCAD compatibility. **CONS:** Modest-size libraries of architectural elements. **COMPANY:** Deneba Software (305/596-5644, www.deneba.com). **LIST PRICE:** $799.95.

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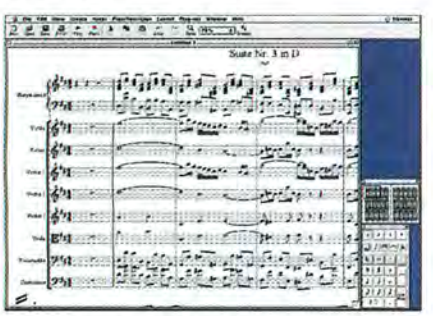
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Music-Notation Software

TAKE NOTE OF THESE WINNING SCORE APPLICATIONS

CREATING PROFESSIONAL-LOOKING musical scores on a computer has always been a daunting task. Traditionally, music-notation programs have been either too complicated, or simple but too limited in the variety of scores they can produce.

Two professional notation programs, Coda Music Technology's Finale 2000 and Sibelius Software's Sibelius, attempt to find a middle ground between these extremes by offering comprehensive feature sets and uncomplicated interfaces. They succeed to varying degrees. Finale 2000 is easier to use than past iterations and remains the most complete notation program available for the Mac. The slightly less comprehensive Sibelius is still quite capable and the easiest to use in its class.



Sibelius Plays Bach All we did was open this standard MIDI file and add the title—Sibelius did the rest.

Curtain Call

Finale has a well-earned reputation as the most feature-packed—and most confounding—music application made for the Mac. The program has always had seemingly endless tool palettes and layer upon layer of dialog boxes. The fact that Finale originally shipped with enough documentation to put a metropolitan phone book to shame didn't lessen the impression that the program was impossibly complicated.

While still complex, the latest release, Finale 2000, is easier to use than previous versions. When you launch the program, a setup wizard asks you to choose instruments for your score. It creates the score's clefs and instrument transpositions based on your choices, and groups related instruments—strings, for example. Coda has also reduced the number of tools that appear in Finale's Tool palette and has made the program much smarter about spacing notes.

However, Finale 2000's improvements comprise more than interface changes. The program includes 42 plug-ins that extend Finale's capabilities in welcome ways. The Piano Reduction plug-in, for example, lets you reduce any number of selected staves into a piano grand staff. Of course, the results are not up to the standards of professional transcription, but for quick and dirty piano transcription, it's not bad. Split Point, another useful plug-in, lets you determine, in any selected region, where to divide notes between the two staves of a piano staff.

Macintosh Premiere

Sibelius has received rave reviews for its ease of use on the PC and on RISC-based Acorn platforms. For the most part, the eagerly anticipated Mac version doesn't disappoint. Unlike Finale, Sibelius lets new users produce professional-looking scores with relative ease. This is largely attributable to Sibelius's note-entry method. Like Finale, Sibelius lets you enter notes via a MIDI keyboard, but the program works best when you enter notes via the Mac's standard keyboard.

Sibelius's interface is built around a series of five number pad–input palettes. The most common characters and commands are assigned to these palettes; this makes working with notes very easy. For instance, to enter a quarter note, you press F8 on the Mac's keyboard, press the 4 key on the number pad to select the quarter-note value, and click the note into place. Finale's much more limited number pad–entry scheme, on the other hand, forces you to use the program's Tool palette or its many menu commands for anything other than simple note-entry tasks.

Sibelius also gives you outstanding playback options. Not only can it play back with articulations and dynamics, but it can actually *swing*, playing jazz charts with light, normal, or heavy amounts of this style. Finale offers no such option for expressive playback.

Finale 2000 and Sibelius differ in speed and in the degree to which they let you modify the basic elements of your scores. In terms of speed, Sibelius easily outpaces Finale's relatively slow scrolling navigation. With Sibelius, you don't scroll through the score at all; rather, you click within the Navigator window (a miniature overview of the score) to go directly to a section of the score.

Sibelius automates a number of tasks that you have to perform manually in Finale—but this automation sometimes limits your control of the score. For instance, when you enter music into the program via a MIDI keyboard, Sibelius takes its best guess as to where to place the split point in the resulting piano score. By contrast, Finale lets you set the split point manually. This is especially useful for piano pieces in which one hand routinely plays keys that the other usually occupies. For such situations, Finale takes the prize.

Although Sibelius can create beautiful and complex scores, you will inevitably encounter its limitations. For example, if you want to analyze a chord and create an accompanying chord symbol, the program simply can't comply. While Finale may be slower, its depth and versatility give you greater control over the final appearance of your score.

Macworld's Buying Advice

Which program you should purchase depends on the types of scores you wish to produce and how much time you want to spend producing them. If you require total control over your scores and plan to notate very complex pieces, Finale 2000 remains the better choice. But if your needs are more modest and you want to create great-looking scores quickly and easily, get Sibelius.—CHRISTOPHER BREEN

Finale 2000

RATING: ♦♦♦♦ **PROS:** Comprehensive; helpful plug-ins. **CONS:** Complex interface. **COMPANY:** Coda Music Technology (800/843-2066, www.codamusic.com). **LIST PRICE:** $545.

Sibelius

RATING: ♦♦♦♦ **PROS:** Fast, easy to use; varied playback options. **CONS:** Split points not always accurate; no automatic chord-symbol creation. **COMPANY:** Sibelius Software (888/474-2354, www.sibelius.com). **LIST PRICE:** $599.

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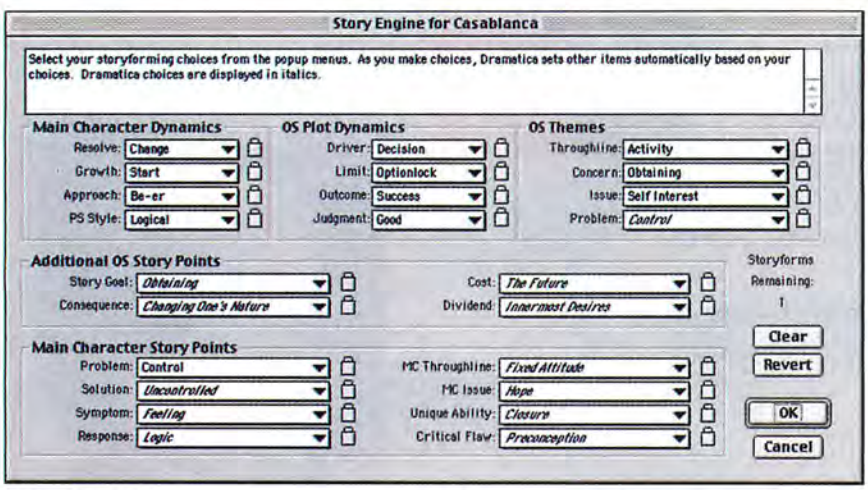
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Fiction-Writing Tools

PLOT THICKENS WITH DRAMATICA PRO, PLOTS UNLIMITED

USING DESKTOP SOFTWARE TO *compose* a novel or screenplay is nothing new; after all, word processing was among the first personal computer applications. But using software to *conceive* a story sounds like magic. Yet this is the promise of Screenplay Systems' Dramatica Pro 4.0 and Ashleywilde's Plots Unlimited 1.04, two Mac programs designed to act as fiction-writing coaches for wannabe Faulkners and Hemingways.



Making Casablanca Dramatica Pro includes examples of well-known movies to help you learn the program.

Using algorithms to craft a novel or screenplay will seem like sacrilege to many literary purists. Nevertheless, these programs *can* help you organize your thoughts and spot potential weaknesses in your story. But they don't necessarily make the process easier. Dramatica requires you to learn a difficult dramatic theory. And a primitive interface mars Plots Unlimited, an eight-year-old program with updated packaging.

Plots Unlimited, the brainchild of a veteran TV writer and producer, is based on the notion that there are no new stories, only different ways of telling the old ones. The core of the program is a database of 5,600 conflict situations, each linked with up to 18 related conflicts. Using the program, you can select a conflict that will occur at any point in the story and then add *leadin* or *leadout* conflicts; the former move backward in time, while the latter move forward. For example, one conflict situation, "Pretending to be Jack's friend, his rival, Gary, sets a deadly trap for Jack," leads to six potential leadouts, including, "Jack finds out that Gary has made him the fall guy in a con game. Jack pretends to be duped in order to trap Gary in his own con game." This leadout has its own associated conflicts in turn; create enough conflict situations, and you end up with a plot.

Although it's a fascinating way to explore storytelling, Plots Unlimited seems like magic in a way the developers never intended: Using it, you might think you've taken a time machine to the mid-1980s. Created with FoxPro database software, it feels like a DOS application ported to the Mac; most shareware programs have slicker interfaces.

And the problems are more than cosmetic. You can't undo most operations, and simply changing the default character names is a byzantine process in which you have to click on one name, make the change, and then tell the program whether you're done or want to change any other names. Adding insult to injury, the program ships on floppies. In short, Plots Unlimited needs a serious overhaul, especially considering the $199 price tag.

Dramatica Pro 4.0, a recent upgrade, is based on the Dramatica Theory, a difficult but comprehensive drama theory. Describing the theory in detail is beyond the scope of this review, but Screenplay Systems offers a free guide in PDF format on its Web site; you should learn as much as you can about the theory before purchasing the program. The theory's beauty is that it lends itself to computerization while leaving a lot of room for creativity—if you're willing to buy into it.

The core of Dramatica Pro is the Story Engine, where you answer 24 questions about your story. Based on your answers, the program generates a multitude of reports covering theme, plot, and character development. The Story Engine itself is unchanged, but additional modules guide you through the questions. For example, this version includes Structure Templates—preformatted for a novel, short story, or screenplay—offering instruction specific to that story type.

But the most welcome change is the option to swap Dramatica's occasionally unintuitive terminology for a layperson's language. For example, previous versions of Dramatica used the words *knowledge* and *understanding* in very specific ways; if you choose the layperson's terms in Dramatica Pro 4.0, *gathering information* replaces *knowledge*. The upgrade ships on CD-ROM, and mercifully dispenses with the floppy-based copy protection of the previous version.

Macworld's Buying Advice

Of the two programs, Dramatica Pro is by far the more polished, but you'll need to spend considerable time learning the Dramatica Theory to take full advantage of the program. Plots Unlimited's learning curve isn't so steep, but the program is much more limited in the storytelling guidance it provides, and it suffers from a primitive DOS-like interface.—STEPHEN BEALE

Dramatica Pro 4.0

RATING: ♦♦♦♦ **PROS:** Polished interface; excellent built-in learning aids; flexible use of terminology. **CONS:** Underlying theory is difficult to learn. **COMPANY:** Screenplay Systems (818/843-6557, www.dramatica.com). **COMPANY'S ESTIMATED PRICE:** $300.

Plots Unlimited 1.04

RATING: ♦♦½ **PROS:** Easy to learn. **CONS:** Primitive interface; ships on floppies. **COMPANY:** Ashleywilde (800/833-7568, www.ashleywilde.com). **COMPANY'S ESTIMATED PRICE:** $199.

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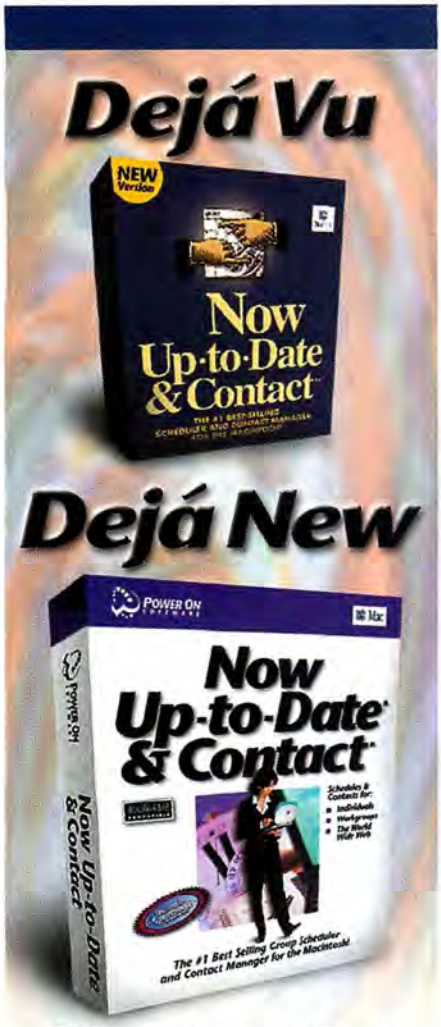
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Outlook Express 5.0

E-MAIL CLIENT ADDS JUNK FILTER

THE CHALLENGE FOR ANY E-MAIL program is to smoothly handle the torrent of e-mail that advanced users receive without drowning casual users in needless complexity. Outlook Express (OE) 5.0, Microsoft's free e-mail and Usenet news program, delivers on both accounts. OE 5 has the features you'd expect from a modern e-mail client, such as HTML-formatted mail, IMAP support, and a fast and flexible Find facility, but it also adds plenty of niceties that make e-mailing easy. For example, you can read and scroll through the Inbox using only your spacebar.



Spam No More Outlook Express 5.0's new Junk Mail Filter isn't perfect, but it cuts way down on the number of junk messages you have to read.

The new Junk Mail Filter and Mailing List Manager features illustrate OE 5's mail aplomb. The former applies an algorithm that attempts to detect junk mail, or spam, in your incoming mail. A Sensitivity slider lets you fine-tune how fervently the program classifies questionable mail as spam. The Average setting worked surprisingly well. Initially, OE incorrectly marked some mail—mostly from mailing lists—as junk, but we reclassified subsequent messages from those senders by simply adding their e-mail addresses to the Address Book. The Mail Rules feature lets you easily mark junk as read mail—and automatically delete it.

The Mailing List Manager lets you define mailing lists; then you can manipulate and file their messages into folders. You can "burst" mailing-list digests into individual messages and then apply Mail Rules to those messages—perfect for filtering out screeds from that buffoon who mars your favorite list.

You can now sync contacts in your Palm PDA with entries in OE 5's Address Book; oddly, you can't yet synchronize e-mail with a Palm device. OE 5 can send and receive mail from Microsoft's Hotmail service, offering an alternative to using a Web browser. Finally, Microsoft has added schedules for mail downloading, and you can control PPP to dial up and disconnect from your ISP.

The improved Mail Rules feature lets you use more criteria to filter mail than that feature in previous versions, and you can have separate rules for POP, IMAP, Hotmail, newsgroup, and outgoing mail. AppleScript support, already extensive, now lets you automate and extend the program by adding any feature you can conceive.

Shortly after OE 5's release, Microsoft discovered a security hole that could allow a malicious user to send an e-mail message that sneaks a file (possibly one containing a Trojan horse or a virus) onto your hard disk. At press time, the company was working on a fix. However, the biggest source of user complaints has been OE 5's difficulty in importing mail from OE 4.5 and Claris Emailer; users have reported repeated freezes and incomplete imports. The import process is also very slow, often taking hours, depending on the size of your previous mail database.

Macworld's Buying Advice

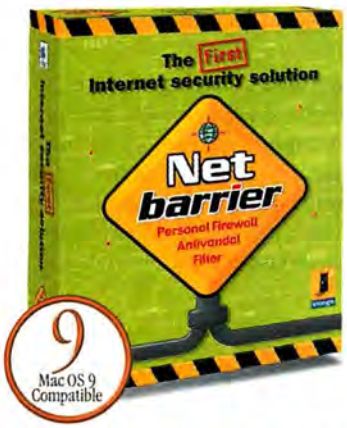
Outlook Express 5.0 is a terrific update that should gain the program many new converts. Users cramped by the limitations of Netscape Communicator or Qualcomm Eudora Light will appreciate OE 5's feature set. The feature gap between OE 5 and Claris Emailer is smaller, but since Claris is no longer updating the latter, OE 5 offers Emailer users an excellent lifeboat—import problems notwithstanding. If you're new to e-mail, OE 5 is likely to fulfill all your needs and then some.—TOM NEGRINO

RATING: ★★★★½ **PROS:** Excellent tools for reading and manipulating e-mail and Usenet news; expertly handles junk mail, mail rules, and mailing lists. **CONS:** Some import troubles; reported security bug. **COMPANY:** Microsoft (425/882-8080, www.microsoft.com). **LIST PRICE:** Free.

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Wacom Graphire

TABLET/MOUSE FOR BUDDING ARTISTS

DIGITAL ARTISTS KNOW THAT nothing compares to a graphics tablet for easy editing of drawings and scanned photos. Alas, graphics tablets like Wacom's Intuos, which starts at $200, are beyond the means of SOHO users on limited budgets (see *Reviews*, January 1999). Wacom's $99.95 Graphire, which pairs a capable graphics tablet with an imperfect mouse, is an economical solution.

The blue-and-gray Graphire tablet measures a mere 8 by 9 inches, so all but the most cluttered of desktops should accommodate it. Like many new input devices, the Graphire supports only USB ports, so you'll need an add-on card if your Mac doesn't have a USB connection. A transparent overlay built into the tablet makes it a snap to trace artwork or photos.



ARNOLD TIOSEO

The Graphire's smoothly tapered pen is comfortable to hold, and when you're not using it, you can stow it in a handy removable receptacle at the top of the tablet. The stylus sports a pressure-sensitive tip, an eraser, and a dual-action rocker switch in the middle. Wacom's control panel lets you program each end of the switch to perform a different function, including clicking, double-clicking, or entering simple keyboard sequences such as ⌘-shift-S. You can also use the control panel to adjust the pen's tip or eraser sensitivity, and you can program the tablet to recognize only a portion of the 4-by-5-inch active area.

Whether you're creating a masterpiece from scratch or retouching a digital photo of your kids, the pen makes it a joy to manipulate almost any type of digital drawing tool. The pressure-sensitive tip and eraser are compatible with a broad selection of graphics programs, including Adobe Photoshop and MicroFrontier's Color It. (See Wacom's Web site, www.wacom.com, for a list of compatible applications.) The Graphire ships with MetaCreations' $99 Painter Classic 1.0.2 and Wacom PenTools, a set of Photoshop-compatible plug-ins.

Although the pen is ideal for drawing, it can't replace a mouse or trackball for most routine Mac work. Unfortunately, the Graphire mouse has a few limitations, which range from annoying to serious. The mouse works only when used on the tablet, and unlike an Apple mouse, neither it nor the pen begin to function until the tablet's driver loads. That means you can't use the Graphire with Apple's Extensions Manager or Casady & Greene's Conflict Catcher while the Mac is booting.

The mouse also lacks rubberized side grips, and its light weight makes it feel less substantial than many other mice. Because the mouse's movement is electronically calibrated to the tablet's surface, you have to pay attention to the tablet's orientation when using the mouse; if the tablet is askew, the cursor tracks at an angle. And although the mouse worked consistently on our PowerBook G3, we encountered occasional lapses in cursor response and scrolling on our blue Power Mac G3. Neither trashing the tablet's preferences file nor reinstalling the driver alleviated the problem.

On the plus side, the Graphire mouse is cordless, and it doesn't have a dirt-trapping ball or rollers. Its two large buttons are easy to press; a knurled scroll wheel in the center doubles as a third button. Graphire's control panel lets you assign the wheel one of 16 levels of scrolling action, from the equivalent of clicking once on the scroll bar to moving one page at a time.

Macworld's Buying Advice

If you need an affordable graphics tablet, the Graphire is a good choice, but its mouse is far from perfect. Still, the Graphire mouse is adequate for most tasks, although it won't liberate you from your Apple mouse completely.—FRANKLIN TESSLER

RATING: ❚❚❚ **PROS:** Pen works with most graphics applications; cordless mouse. **CONS:** Mouse can't be used with extensions managers while the Mac is booting. **COMPANY:** Wacom Technology (360/896-9833, www.wacom.com). **LIST PRICE:** $99.95.

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Macworld

Adaptec PowerDomain 39160

ULTRA 3 SCSI CARD OUTPACES ULTRA 2 BOARDS

MOORE'S LAW FOR PROCESSOR speed has a SCSI corollary: each new version is twice as fast as the last one. Adaptec's PowerDomain 39160 is the first Mac card to support the new Ultra 3 Wide SCSI standard, with blazing 160-MBps performance, double the maximum 80 MBps of Ultra 2 Wide SCSI. And because the card has two Ultra 3 Wide SCSI buses, its total potential throughput is 320 MBps. But the card is expensive, and drive selection is limited.



ARNOLD TIOSEJO

Ultra 3 and Ultra 2 both use *low-voltage differential* (LVD) technology, which permits use of longer cables (up to 12 meters) in addition to providing faster throughput than earlier SCSI versions. However, if you add an older, non-LVD device (pre–Ultra 2 Wide SCSI), the speed drops to 40 MBps and you're limited to 2-meter cables. Fortunately, with the PowerDomain's dual-bus design, you can put older devices on one bus and reserve the other for faster Ultra 2 and Ultra 3 devices. Each bus has an internal and an external connector.

Macworld Lab tested the card on a Power Mac G3/400 with four Quantum Atlas Ultra 3 Wide drives. We performed the tests with all four drives attached to one internal port, and then with two drives on each internal port. The result? The PowerDomain 39160 is fast, but it does not reach the standard's full 160-MBps potential. Using both buses, maximum read speed was 94.7 MBps and maximum write speed was 53.5 MBps. However, this is still about 1.5 times faster than Ultra 2 Wide SCSI (see "Fastest SCSI").

The card doesn't include any drive-formatting software. For single drives you use Apple's Drive Setup; to set up a RAID array you'll need third-party software.

Macworld's Buying Advice

The PowerDomain 39160 offers fast performance, but it also sells for up to $400 more than a plain SCSI card. If you need the fastest possible throughput and are willing to invest in Ultra 2 or Ultra 3 drives, the PowerDomain 39160 is a compelling option. However, the card is costly overkill if you just need to connect a few Narrow SCSI devices.—KRISTINA DE NIKE

RATING: ❦❦❦❦ **PROS:** Fast performance; dual-bus architecture; bootable. **CONS:** Expensive; limited availability of appropriate drives. **COMPANY:** Adaptec (800/442-7274, www.adaptec.com). **COMPANY'S ESTIMATED PRICE:** $549.

Macworld LAB TEST

Fastest SCSI

Best results in red. *Reference systems in italics.* MacBench 5.0 Disk scores are relative to that of a first-generation Power Mac G3/300, which is assigned a score of 1,000. Results for the read and write tests are in megabytes per second.

MACBENCH 5.0

	Disk	1MB Sequential Read	1MB Sequential Write
Adaptec PowerDomain 39160 (dual bus)	2,866	94.7	53.5
Adaptec PowerDomain 39160 (single bus)	2,874	83.2	44.1
Adaptec 2940 Ultra 2 Wide (single bus)	*2,416*	*64.4*	*37.2*
SCSI 2	*1,734*	*9.3*	*9.3*

Longer bars are better.

Behind Our Tests We tested all cards in a Power Mac G3/400 with OS 8.6 and 128MB of RAM.—**Macworld Lab testing supervised by Kristina De Nike**

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Touch-Screen iMacs

iTOUCH AND TOUCHSTATION

THE iMAC'S SLEEK CURVES AND inviting nature make it ideal for use in an interactive kiosk. Kiosks work best, though, when you can make your selections by touching the screen. Installing a touch screen can be a challenge, but several companies will sell you iMacs preconfigured with touch capability. *Macworld* looked at two of these systems: Elo TouchSystems' iTouch and MicroTouch's TouchStation. Although they use different technologies, both products work well, allowing you to make selections without unduly distorting the display.



SUZANNE ROADY

Elo TouchSystems' iTouch

The $1,599 iTouch comes installed on a 333MHz iMac; Elo plans to offer a $1,685 version with the new 350MHz iMac by the time you read this. The $1,981 TouchStation also features a 333MHz iMac; in the first quarter of 2000, the company will offer its product on the 400MHz iMac for the same price.

Elo's Surface Wave technology transmits a sound wave across the CRT surface, detecting your finger's coordinates when you touch the screen. MicroTouch's rival capacitive technology features a transparent, multilayer conductive film that coats the CRT; when you touch the screen, your finger displaces low-voltage electrical current transmitted through the film.

Although the differences are subtle, Elo appears to have the superior technology. The TouchStation overlay, though almost unnoticeable, slightly reduces brightness, and it won't work if you're wearing gloves or using a stylus. However, it does include an antibacterial coating. iTouch doesn't use an overlay and works with almost anything that touches the screen. Each product occupies one of the iMac's two USB ports via a cable that snakes out from the side of the display. Elo secures the cable with a gasket, giving the iTouch iMac a more-finished appearance than its competitor. But these differences are not dramatic—both systems perform equally well as interactive kiosks.

Touch-screen iMacs may find a place in some homes; a child will find a touch screen much simpler to use than a mouse, and kids' software typically provides large clickable areas for navigation. But using a touch screen as your primary display can be frustrating: the Mac OS isn't designed to be driven by mouse-clicks alone.

Macworld's Buying Advice Both systems work well as kiosks, but we lean toward Elo TouchSystems' iTouch, which is less expensive and more flexible.—JEFFY K. MILSTEAD

iTouch

RATING: ▮▮▮▮ **PROS:** No overlay; works with any pointing device. **CONS:** None significant. **COMPANY:** Elo TouchSystems (800/356-8682, www.elotouch.com). **COMPANY'S ESTIMATED PRICE:** $1,599.

TouchStation

RATING: ▮▮▮▮ **PROS:** Antibacterial screen coating. **CONS:** Uses overlay; requires finger touch. **COMPANY:** MicroTouch (800/642-7686, www.microtouch.com). **COMPANY'S ESTIMATED PRICE:** $1,981.



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Corel Print House 2000

CONSUMER-ORIENTED PAGE-LAYOUT SOFTWARE IS EASY BUT INFLEXIBLE

CONSUMER-LEVEL PAGE-LAYOUT programs can be a mixed bag. While they aim to offer a wealth of tools for creating basic designs, some are unnecessarily difficult to master. Corel attempts to make things easier with Corel Print House 2000, a $79 entry-level page-layout program that includes a wealth of images, templates, and fonts (six CD-ROMs' worth), as well as Corel Photo House, a simple image editor. However, while the program is generally easy to use, its wizard-driven interface is inflexible when you work outside the program's templates.



Graphics Cornucopia Choose from among Corel Print House 2000's many family-oriented projects.

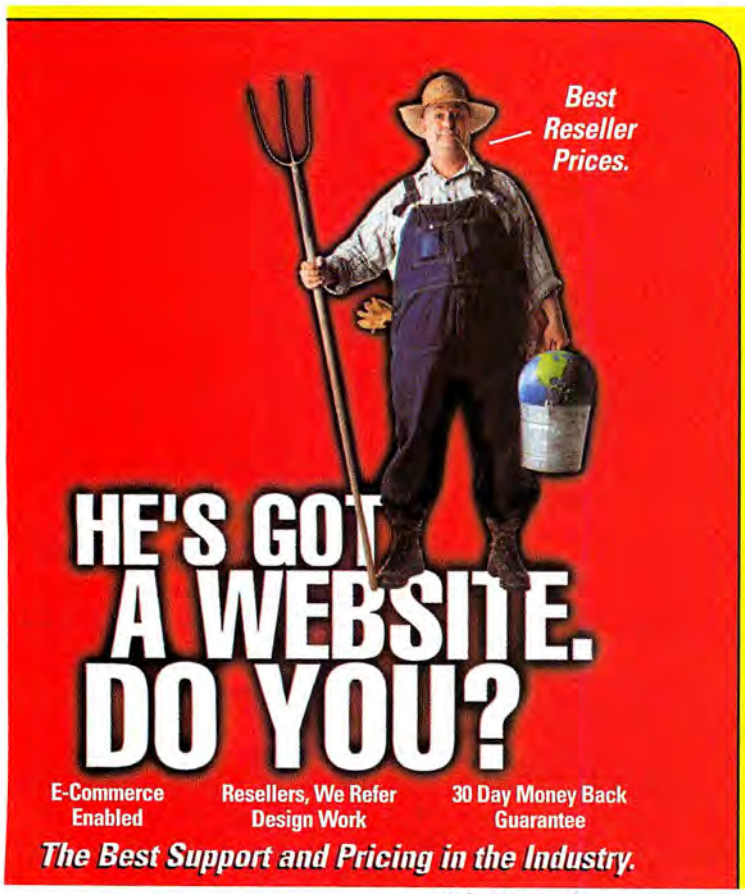
Corel Print House 2000 functions best when you follow its prompting. When you launch the program, it asks you to select from a number of family-oriented projects, including greeting cards, calendars, certificates, and labels. Clicking on a project type reveals a series of folders in the Notebook window. These folders contain templates for the project you've chosen—for example, if you're creating a greeting card, the folders include templates for such occasions as birthdays, weddings, and Mother's Day.

Once you choose a template, you can change elements, add words and objects, save your project, and print your work. Clicking on any of these options presents another series of choices. For example, if you choose to change an element, the program first asks which object you'd like to modify; then it asks which aspect of the object (such as its color, size, orientation, or line style) you'd like to alter. This hand-holding process continues until you complete your project. In addition to letting you print your graphics, Print House makes it easy to prepare them for the Web.

Regrettably, working outside the program's templates can be trying. The Notebook offers a Start From Scratch option that lets you use the Text, Draw, and Table tools to create customized forms and banners. However, if you go this self-directed route, you'll find that simple tasks can take quite a few steps to complete. For example, if you want to change the alignment of a block of text, you can't just choose a new alignment style from the Text menu. Instead, you must highlight the text, choose the Text & Table Settings option in the Notebook window, select the Change Layout option, and finally apply a new alignment setting. This kind of needless clicking through option after option is far too typical of Corel Print House 2000's "wizards run amok" interface.

Macworld's Buying Advice Corel Print House 2000's interface is annoying but not so restrictive that you can't get some good results from it. The program ships with a rich load of images, is inexpensive, and requires little learning before your homespun projects are on their way out the door or onto the Web.—CHRISTOPHER BREEN

RATING: ♦♦♦ **PROS:** Inexpensive; lots of images. **CONS:** Restrictive, hand-holding interface. **COMPANY:** Corel (800/772-6735, www.corel.com). **LIST PRICE:** $79.



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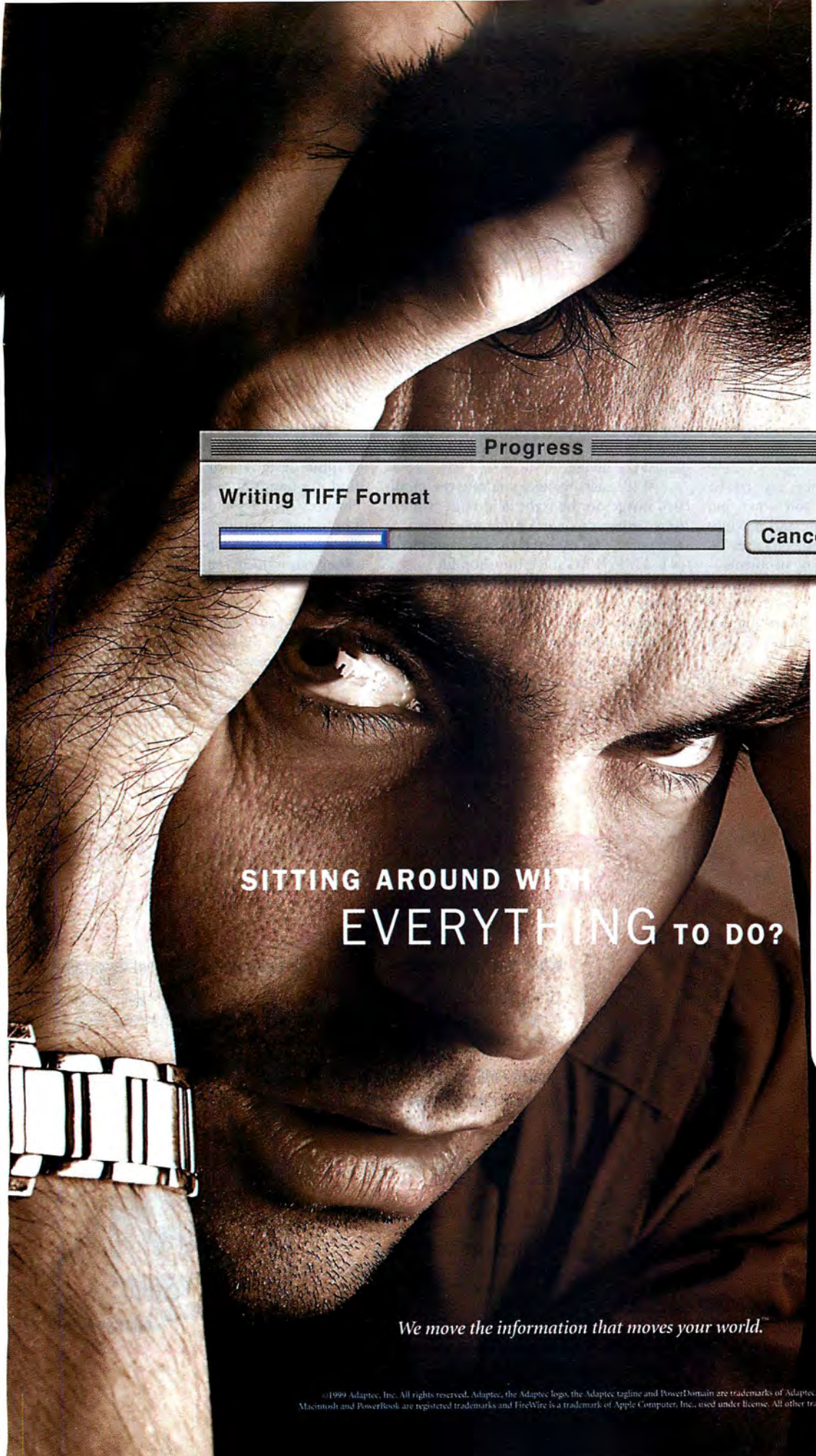
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PhotoGenetics

PHOTO CORRECTION FOR CONSUMERS

WITH THE GROWING POPULARITY of digital cameras, consumers need an easy way to correct photos. If the software bundled with your camera can't do the job or seems too complicated to use, consider Q-Research's PhotoGenetics, an inexpensive stand-alone program that makes it easy to fix common problems such as red-eye and poor lighting. The program is available as a $30 download or $40 CD; Q-Research also offers PlusPak, a $30 set of optional add-ons you can download from the company's Web site.

PhotoGenetics doesn't try to be another Adobe Photoshop; you won't find Photoshop's extensive artistic and production tools here. PhotoGenetics focuses on fixing everyday digital-imaging problems—although you can use it to add *some* artistic flair. In fact, the program almost goes too far in distancing itself from Photoshop; for example, its *genotypes* are just filters with a cryptic new name.

The interface is simple, displaying your original image in a large main window with easily identifiable buttons on the side for cropping, rotation, printing, and help. When you click on the Start Evolution button, the program displays modified versions of your image in a window that appears on the right. The Genotypes palette lets you pick from 15 image filters that adjust the image.



Compare and Contrast As you adjust the image on the right, you can compare it to the original on the left.

With each change, you rate the modified image on the right in a range from *no better or worse* to *a little better* to *excellent*. At any point, you can stop to save your image as a TIFF, JPEG, or Photoshop file.

In addition to making adjustments through the Genotypes palette, you can also change the image's color temperature, making it appear hotter (toward the red end of the spectrum) or cooler (toward the blue).

Along with performing basic image-correction functions, the genotypes can also produce X-ray and colorizing effects. And the Dewarp genotype removes the distortion caused by a wide-angle lens.

As you apply a genotype, you can adjust its intensity and save the setting as a new genotype. The PlusPak includes additional genotypes for enhancing specific colors, correcting lens distortions, and producing other effects.

Although the program's interactive image-correction functions are geared toward modifying images one at a time, it includes a batch-processing mode that lets you correct a whole folder of images with one keystroke.

Macworld's Buying Advice PhotoGenetics targets consumers, but some graphic designers or photographers may find it a handy tool for performing quick changes on an image without launching Photoshop. Considering its light price tag, this simple one-trick pony is certainly worth trying out.—ANDREW SHALAT

RATING: ▮▮▮▮ **PROS:** Affordable; simple interface. **CONS:** Unnecessarily cryptic naming of functions. **COMPANY:** Q-Research (800/689-0639, www.q-res.com). **LIST PRICE:** Download, $30; CD version, $40.

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Image-Compression Plug-Ins

PHOTOJAZZ AND LURAWAVE OUTDO JPEG COMPRESSION

JPEG MAY BE THE TRIED-AND-true photo format for the Web, but with its tendency to add blocky artifacts to compressed images, it still doesn't get any respect. Several companies have released Adobe Photoshop plug-ins that compress images without introducing those unsightly distortions. Joining Altamira Group's Genuine Fractals (★★★★½; *Reviews*, March 1999) and LizardTech's MrSID (★★★½; *Reviews*, December 1999) are LuraTech's LuraWave and BitJazz's PhotoJazz 2.

PhotoJazz, intended largely for use with prepress applications, is based on a lossless compression scheme but offers relatively limited compression ratios—an average of 2.5:1, compared with 10:1 or more for lossy compression schemes, such as JPEG. However, PhotoJazz gives you smaller files than Photoshop's TIFF LZW option.



Squeezing Pixels LuraWave lets you choose any compression ratio.

The $29 entry-level version produces RGB output only, the $79 version provides CMYK output as well, and the $99 version supports output of 16-bit multichannel files. All three include PhotoJazz XT for importing PhotoJazz images into QuarkXPress, and PhotoJazz QT, which lets you open and save PhotoJazz images using QuickTime programs. BitJazz offers a free version that lets you open PhotoJazz images in Photoshop and most QuickTime-savvy programs.

LuraWave competes not so much with PhotoJazz as with MrSID. Both are based on *wavelet technology*, a lossy compression scheme that yields fewer distortions at any given compression ratio than JPEG. LuraWave's compression scheme appears to be just as effective as MrSID's. Images compressed at 10:1 had no perceptible artifacts; images compressed at 20:1 had only minor artifacts. LuraWave also includes a lossless option, but its compression ratios appear to be no better than LZW's.

LuraWave's best feature is its price: just $79, compared with MrSID's $495. Unfortunately, LuraTech does not offer a free Photoshop plug-in for opening the files.

Macworld's Buying Advice LuraWave offers compression features similar to MrSID's and costs much less. PhotoJazz is a tougher sell, offering marginally better lossless compression than Photoshop's TIFF LZW option but little else.—STEPHEN BEALE

LuraWave

RATING: ★★★★ **PROS:** Affordable. **CONS:** No free decompression plug-in. **COMPANY:** LuraTech (650/326-8829, www.luratech.com). **COMPANY'S ESTIMATED PRICE:** $79.

PhotoJazz 2

RATING: ★★★ **PROS:** Better lossless compression than Photoshop's TIFF LZW. **CONS:** One-trick pony. **COMPANY:** BitJazz (415/488-9626, www.bitjazz.com). **COMPANY'S ESTIMATED PRICE:** RGB version, $29; CMYK version, $79; multichannel version, $99.

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Digital Media Remote

HANDY REMOTE CONTROL

YOU WOULDN'T THINK OF SURFing TV channels without your trusty remote control, and watching a video without the ability to pause or rewind would be unimaginable. So why not have a remote for running audio and video on your Mac? That's the idea behind Keyspan's Digital Media Remote, a $79 hardware device that uses infrared (IR) technology to control Mac-based media-playback software, including AppleCD Audio Player, Apple DVD Player, QuickTime Player, Casady & Greene's SoundJam MP, Microsoft PowerPoint, and RealNetworks' RealPlayer.

We tested the Digital Media Remote with each of these applications and found that it worked as advertised. Standing as far away as 35 feet from an iMac, we could play, pause, rewind, and otherwise control audio and video as easily as if we'd been sitting at the keyboard. Of course, because it's an IR connection, you need a clear path between the remote and your Mac. Put anything in the way—a chair, a monitor, even a person—and you've effectively blocked the signal.

The package includes a small remote control and an IR receiver that plugs into a Mac's USB port. The remote provides typical controls—including play, pause, reverse, fast-forward, volume up, and volume down—as well as a button that lets you cycle through open applications.



GIBSON

Installing the remote is easy. Unfortunately, configuring the remote for use with other Mac programs—those not specifically designed for playback—is not, at least with the software that came with our review unit. The package includes a DMR Manager control panel that lets you map any button on the remote to any keyboard command in a Mac program. For example, you can program the remote to scroll pages up and down in Adobe Acrobat, a neat feature if you plan to use PDF files in an upcoming presentation. However, the mapping commands are confusing; the program won't recognize any changes you've made unless you click on an Accept Key Press button, but only the documentation explains this—the interface doesn't offer a clue. (An update of the software, available at Keyspan's Web site, fixes this problem with an easier-to-follow interface.) We also found that our iMac sometimes crashed when we tinkered with DMR Manager while an application was running.

Macworld's Buying Advice The Digital Media Remote is a handy tool for making media presentations or watching a DVD movie without being tethered to your Mac. But at nearly $80, it's too expensive for most casual users. And prepare yourself for some trial and error if you want to customize the remote or configure it for a nonplayback application.—PHILIP MICHAELS

RATING: ♦♦♦½ **PROS:** Powerful remote control; installs quickly. **CONS:** High price for nonessential gadget; customizing it can be hard. **COMPANY:** Keyspan (510/222-0131, www.keyspan.com). **COMPANY'S ESTIMATED PRICE:** $79.

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Madden NFL 2000

MAJOR SPORTS GAME COMES TO MAC

HELL HAS FROZEN OVER. THOSE of you who doubt this assertion need only look to the shelves of your local Macintosh software dealer for proof. There you'll find copies of Aspyr Media's Madden NFL 2000—the kind of major sports title that many claimed would arrive in a Mac-compatible version only when hailstorms came to Hades. While Madden is an attractive and rich football simulation, it may prove frustrating to all but the most die-hard players, thanks to an obtuse interface and sparse documentation.

It's a shame that the interface is so convoluted, because the game itself is an impressive piece of work. You can tackle the gridiron in a number of ways. For quick, in-your-face action, choose Arcade mode, where you can select from a limited arsenal of plays and the players' moves are unrealistically exaggerated. Other modes offer more-realistic play and an expanded playbook. For example, in Exhibition you choose a couple of teams to compete in a single game; in Season your team plays the 16 regular season games; and in Franchise you control the workings of a team for up to 30 seasons. Practice mode is the perfect place to hone particular plays.



Unreal Action Is your favorite NFL team in the cellar? Lead its Madden NFL 2000 equivalent to victory.

Those who've played sports games on a Sony PlayStation will quickly feel at home with Madden. In a move typical of console games, Madden lets you control the ball carrier if you're on offense or integral defensive players if your opponent has the ball. For example, after you've chosen from a variety of plays, you can control the quarterback's movements, as well as when and where he throws the ball. Like a console game, Madden was designed for play with a game pad—if you don't have one, get it in a hurry so you can compete in the Madden Super Bowl.

Madden is nearly infinitely configurable. Within the Customize AI dialog box, for instance, you can tweak the aggressiveness of your offensive and defensive plays, the accuracy of your quarterback's passes and wide receivers' catches, and the overall ability of your running backs. You can also control weather conditions, rosters, and the likelihood that certain penalties will be called.

Unfortunately, configuring the game is far too complicated. Game options are scattered throughout numerous dialog boxes and the manual provides limited guidance. This may be fine for players who've been playing the PC version of Madden for nearly a decade, but Mac players, likely new to the game, could use more help than the terse manual and Read Me file provide.

Macworld's Buying Advice Despite its *maddening* interface and manual, Madden NFL 2000's amazing depth and varied game play make it a must-have for any pigskin-loving Mac gamer.—CHRISTOPHER BREEN

RATING: ★★★★ **PROS:** Varied ways to play; highly customizable. **CONS:** Confounding interface; slim manual. **COMPANY:** Aspyr Media (888/212-7797, www.aspyr.com). **LIST PRICE:** $50.

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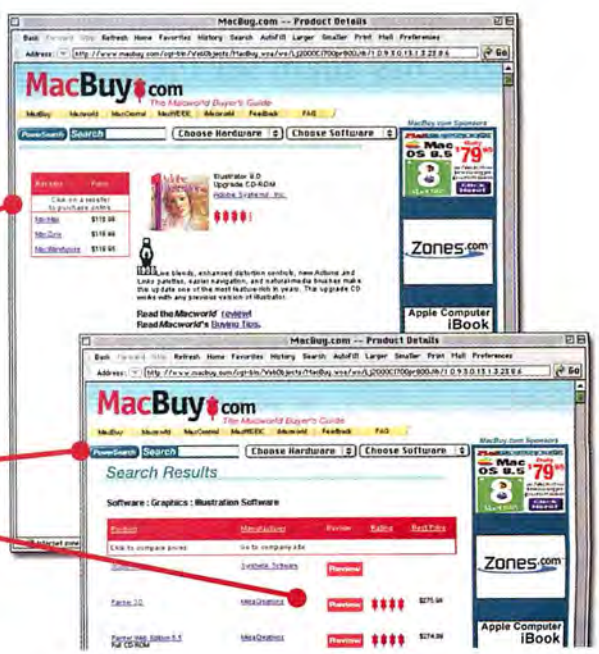
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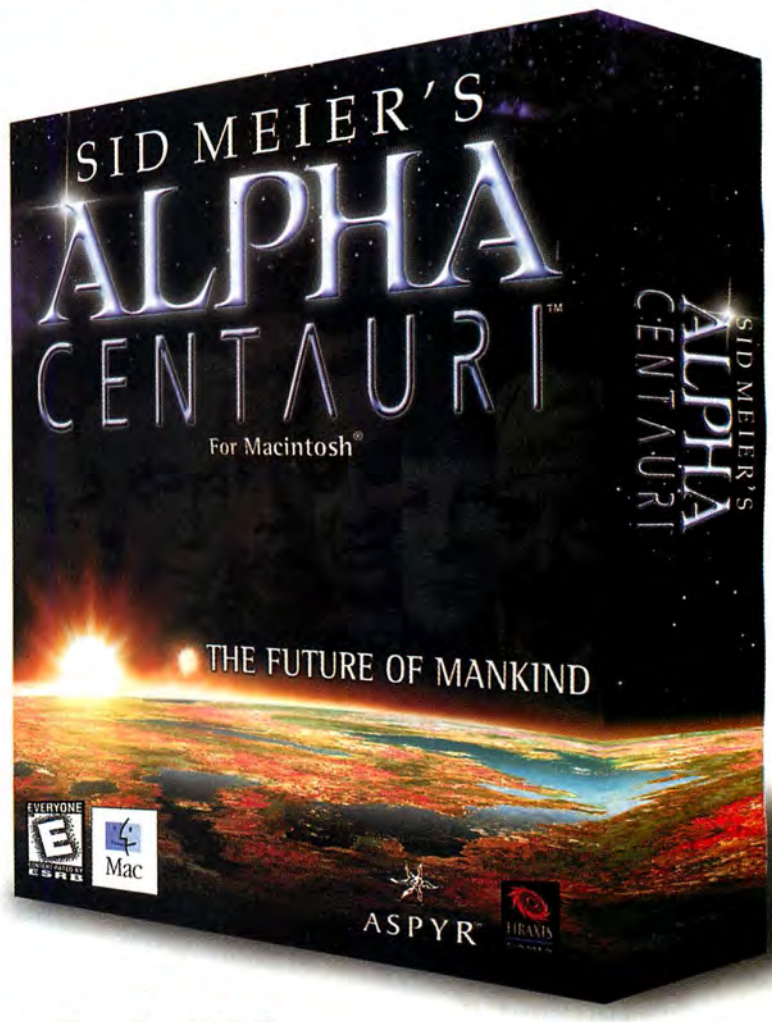
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Tackle Madden NFL 2000

GO ALL THE WAY WITH THE MAC'S MOST EAGERLY ANTICIPATED SPORTS GAME

by Christopher Breen

One of my PC pals—and yes, I like to think I'm broad-minded enough to include within my inner circle those who use an inferior operating system—recently commented: "What is it with you Mac users?! I've never met such a group of whiners in my life! One perceived slam of Apple in the press, a single interface element that varies by two pixels from the norm, or the failure of Amalgamated Software Corporation of America to release a Mac-compatible version of its Ultra Thingummy Pro 4, and you people begin caterwauling like a sleep-deprived, teething infant who's had a favorite Orajel-dipped pacifier ripped from its aching maw."

After purging this nincompoop's name from my Christmas-card list and posting his personal information—including home phone number and shoe size—to every rabid Macintosh newsgroup and Web site I could locate, I thought, in my broad-minded way, "You know, maybe he's onto something."

Case in point: For years I and countless other Macintosh gamers have alternately pleaded, cajoled, and held our collective breath in the vain hope that Electronic Arts would deign to license a Mac version of one of its fabulous sports titles. Finally, toward the end of 1999, this demand became reality. Aspyr Media brought the hot, hot, hot electronic-football franchise, Madden NFL 2000, to the Mac (to read my review of the game, see *Reviews*, elsewhere in this issue). I nearly wet myself when the first prerelease version of the game hit my mailbox.

But after playing with the game for a while, I felt a fine whine beginning to build. Faced with Madden's countless dialog boxes, page after page of defensive and offensive plays, and a manual that I politely characterize as "erring on the succinct side," I formed a whine—minus a colorful obscenity or two—along these lines: "Any Mac users who've never encountered a PlayStation's clunky and necessarily limited interface are going to scream bloody murder when they first attempt to play this game."

And I'd hate to have that happen—not only because I'd like to cleanse Mac users of this "whiner" label but also because Madden is an important first step in bringing more sports games to our favorite platform. Therefore, I decided it would prove helpful to offer a brief primer on how to get Madden NFL 2000 up and running (and passing, receiving, and kicking).



RICCARDO STAMPATORI

Pregame

When you're trotting into Bubba's Big House of Mac Software to buy a copy of Madden, be sure to stop by the game-controller aisle to pick up some kind of Mac-compatible game pad—Madden was designed for pad play, and you'll be at a disadvantage without one. I use a Gravis (800/235-6708, www.gravis.com) Xterminator Digital Game Pad ($40) on my Mac, and frankly, although it's a swell game pad, it's more than I require for the game. A simple PlayStation-style game pad such as Gravis's $20 GamePad Pro USB serves nicely—to get the job done, all you need is a four-way directional pad and eight buttons (plus a start button). Remember to select the game pad in the Input section of the Madden NFL 2000 Setup window.

Easy Does It To have the Big Fun right away, set up the game so you control all the commands—hike, throw, spin, straight-arm—with a single button. Later, when you get a feel for the game, you can turn off this wussy option and control the game's many functions with separate buttons. To configure your game pad for one-button control, choose Arcade mode in the main screen, select Controller Select in the next window, press Button 2 on your controller, click on Controller Config in the next window (*sigh*, see what I mean about all the windows?), and finally turn on the One Button–control option.

Training Camp

When first starting out in Arcade mode, don't fret too much about play calling. Pick a few offensive plays you like—a

continues

couple of running plays, a short-yardage pass play (a screen pass, for example), and a couple of downfield pass plays—and base your offense on them. Don't be concerned about defensive-play calling at all. Unless you're near the goal line or receiving a punt on the fourth down, press Button 2 and your team will play some kind of zone defense. For goal-line defense and punt returns, the computer can select plays for you—just let the play timer run out. Sure, playing this way will cause your team to lose nearly every time, but you'll get a feel for timing and player movement without the distraction of strategy.

Practice, Practice, Practice Having endured the boos your recent execrable play generated, you need to actually learn how to play the game. To do so, select Practice from the main screen, pick a team, decide whether you want to practice offense or defense, and then turn on the Play Info option—this displays the name of the play you're practicing and draws the play patterns on the field (see "Practice Makes Perfect"). Now select a formation that appeals to you—or better yet, one that your team of choice favors (I-formation with three wide receivers for the 49ers' offense, for example)—and select a play that your team would typically execute. Overall, it's a good idea to become familiar with your favorite team's playbook. Madden is tuned to take advantage of a team's strengths—a West Coast short-pass offense for the Chiefs and an in-your-face offense for the Falcons, for example. Play to those strengths.



Practice Makes Perfect Use the Play Info option to view play names and patterns.

I'd stick with the One Button–control option for the first few go-rounds in Practice mode. When using the single button, you'll more easily perceive, for example, that when your receivers run a short sideline pattern, their forward progress propels them out-of-bounds unless you release the ball in a hurry. Likewise, you'll learn that holding down Button 2 fires a bullet pass, whereas quickly pressing and releasing the same button lofts the ball.

Once you're comfortable with your timing, turn off One Button control; then you can select which receiver gets the ball and have better command of special moves like sprinting and twisting. Thanks to Madden's idiotic interface—sorry, I'm whining again—you have to return to Arcade or Exhibition mode to switch off One Button control.

To get a clearer idea of what the button commands do when you're controlling the ball carrier, enter Practice mode and turn off the Defense option. Now when you practice, only the offense appears on the field, and you can try out the buttons on your game pad until the cows come home without fear that a 350-pound defensive lineman will mow down your player.

In the Game

Madden tries to model the real thing, so play it that way:

- Follow your blockers when running.
- For accuracy, make sure your quarterback's feet are planted before throwing.
- Avoid throwing into double coverage.
- Don't rely on the long pass—play for the first down rather than the score.
- Madden allows you to call audibles. If the defense lines up in a way you don't care for, call an alternate play at the line.
- Know the other team's players (Madden ranks players by ability). Avoid running at or throwing toward a team's best defensive players.
- When on defense, hit ball carriers hard—by pressing the Action button for a speed boost—and you may jar the ball loose.
- Use the clock. If you're ahead with little time left in the game, run out the clock with running plays. If your team is down and short on time-outs, either have your receivers run out-of-bounds or ground the ball to stop the clock.

Postgame Show

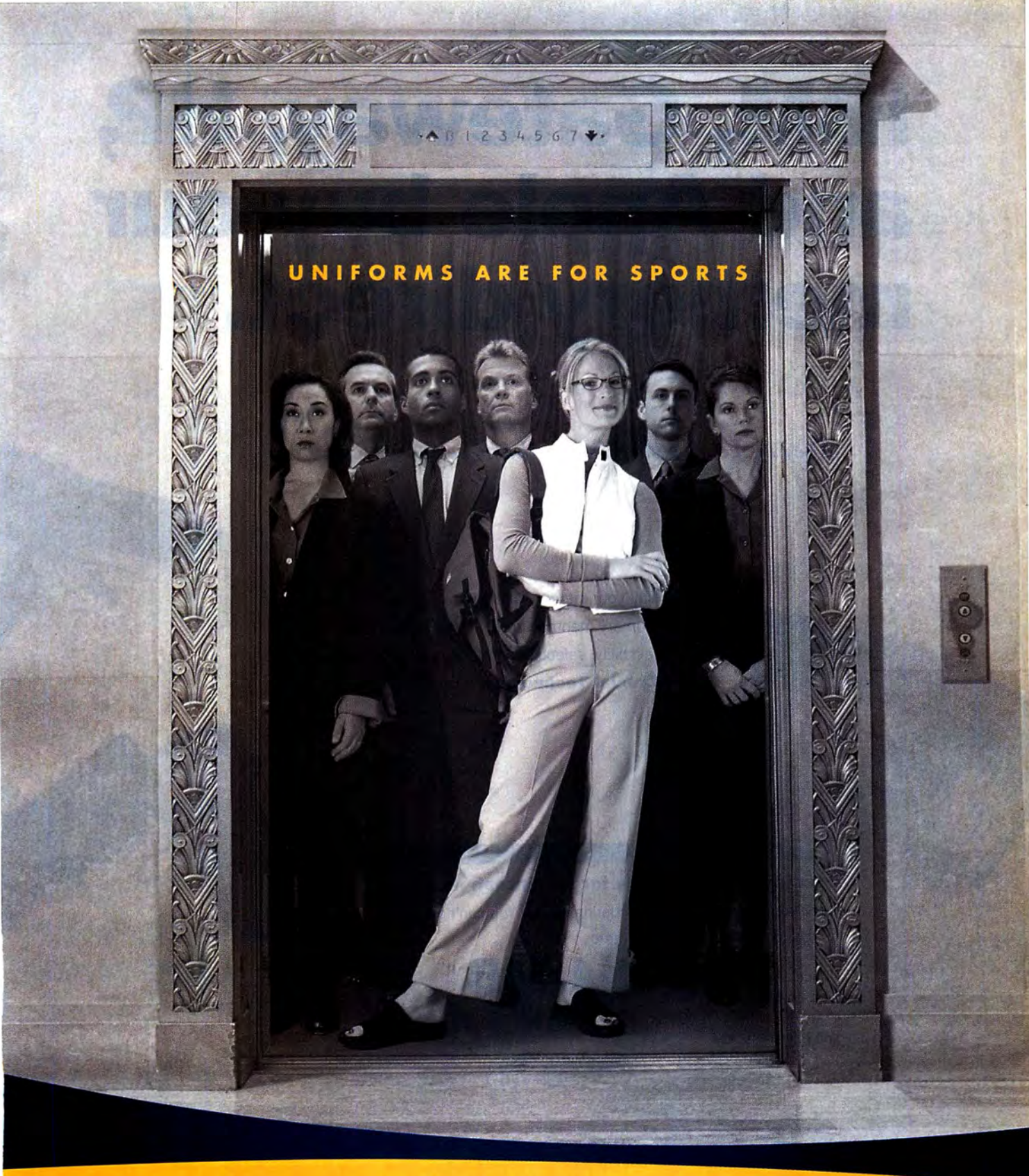
Having taken these tips to heart, you won't have to wait long before you're chilled by a Gatorade shower and on your way to the Super Bowl. Sure, at first the going may be tough—but when the going gets tough, my friend, the tough call their agents and demand a five-year, $45.7 million contract and a private jet. And that's hardly something to whine about, is it? **m**

Contributing Editor CHRISTOPHER BREEN pleads with you, in his most annoying, whiny voice, to purchase his coauthored book, *My iMac* (IDG Books Worldwide, 1999).

Illegal Procedure

SOMETIMES LIGHTNING-FAST MOVES AND A BRILLIANT strategic mind aren't enough to get the job done. When you need an extra edge, select Arcade or Exhibition mode and choose Enter Codes from the Custom Gameplay menu to enter these cheat codes.

MOJO: all '60s team
SIDEBURNS: all '70s team
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Mac OS X Unveiled!

INTRODUCING THE RADICAL NEW FACE FOR YOUR MAC

SOMETIMES IT'S HARD TO SEE THE FUTURE UNTIL IT SMACKS YOU IN THE FACE. For the past two years, Apple has been telling us that Mac OS X is on the horizon—and that when it arrives it'll be a revolutionary development that will change the Macintosh experience forever. But like the year 2000, the arrival of OS X always felt like a distant eventuality.

Suddenly, the future is now. Shortly after the calendar clicked over to 2000, Apple unveiled Mac OS X's brand-new interface—named Aqua—giving the world its first glimpse of how we'll all interact with our Macs for years to come. And for all the hand-wringing and online carping about Apple's plans to remake the Mac interface, the changes Mac OS X will bring are more likely to delight than to disappoint.

While most Mac users will initially notice the new interface elements Apple is adding in OS X, it's important to note that the most significant changes are happening behind the scenes. There, you'll find that Mac OS X is a fully modern operating system, with features such as preemptive multitasking and protected memory to make the hearts of computer geeks go piddy-pat. You may not care about those buzzwords, but you *will* care about how the technology behind them will improve your Mac experience. For details on the structural changes to Mac OS X, see the sidebar "Behind the Scenes."

by Jason Snell

ILLUSTRATIONS BY CHRISTIAN NORTHEAST

AQUA EXPLAINED

1 Go Man, Go
Go has been added to the menu-bar items to allow you to jump to any location—whether local, on your network, or on the Internet—that you want to access quickly.

2 Navigating through Shadows and Fog
To add a three-dimensional feel to the new interface, each window casts a faint shadow on whatever is behind it. Additionally, every pull-down menu and dialog box is partially transparent, revealing a hint of what's behind it.

3 Peekaboo!
In OS X, dialog boxes and alert messages display *in* the window they affect. When you choose to save a document, a small transparent dialog box slides out from under the window's title bar, eliminating any confusion about which document you were *really* trying to save.



4 Throbbing Defaults
Instead of being surrounded by a black border, default buttons throb gently.

5 What's Up, Dock?
The Dock lives at the bottom of the screen and can contain any item you want, including minimized windows, folders, applications—even links to Web sites. Once the Dock takes up the entire bottom of the screen, it starts to shrink icons so you can fit as many as you desire. You can then use a magnification feature to increase the size of the icons as you move the cursor over them.

The Transition Begins

The first question most Mac users will have about Mac OS X is a simple one: When is it arriving? Over the past two years, the planned release dates for this new operating system have continued to change, but now Apple has clearly outlined how Mac OS X will spread from the design labs at Apple to the world at large.

Currently, Mac developers are using a preview version of OS X, one that doesn't include the new Aqua interface. This spring, those developers should receive the final prerelease version of Mac OS X for compatibility testing. The next step will be OS X's public release, which Apple says will happen this summer. (Apple has yet to address the question of this substantial upgrade's cost.)

During the latter part of 2000, Mac OS X will likely be included with new Mac models as they're introduced; this period will culminate in the final date on Apple's OS X rollout calendar, January 2001. The company says that after that point all new Macs will ship with Mac OS X, not Mac OS 9, on their hard drives.

So whether you're planning on buying OS X this summer, or waiting until you buy a new Mac next year, chances are that sooner or later you'll be using Mac OS X.

Catch the Wave

While the Aqua interface represents a major evolutionary step away from the current Mac interface—a step that adds flair to the on-screen experience, matching Apple's striking external designs—OS X is still recognizably Macintosh. The Mac menu bar remains intact along the top of the screen (although there's now a Go menu alongside File, Edit, View, and Special), and at first glance most windows look like traditional Mac windows.

But if you give Aqua a closer examination, you'll discover a host of artistic touches that elevate this new interface above its predecessors. That's not to disparage the current Mac interface—today's technology allows Apple to make enhancements that simply couldn't be included before now.

Widgets The first thing you notice when you look at Aqua is, of course, the color—silver with blue highlights. Most colored items have a shiny, 3-D appearance that makes them look as if they're made of polished glass. Aqua's blue progress bar undulates as it moves from left to right across the screen. Brightly colored sliders stand out against windows' silver backgrounds. Even scroll bars look like fragile blue-glass objects.

In the current Mac interface, buttons that can be pushed by pressing the return key stand out because they have a thick line drawn around them. Most longtime Mac users have figured this out, but it's an interface convention lost on many novice users. In Mac OS X, you can't miss the default button—it's blue, and it throbs brighter and darker while waiting for your command.

Windows At the top left corner of every window are three brightly colored circles (red, yellow, and green) that Apple says were designed to evoke a traffic light. These buttons let you control what happens to the active window. When you move your mouse over them, they reveal their functions. The leftmost circle (red) fills with an X, indicating that if you click on it, the window will close—pretty much

how the Mac behaves when you click on the top left button today.

Next to the red circle is a yellow one, which fills with a minus sign—click on it and you'll minimize the window, making it disappear from the screen and move to Mac OS X's new Dock area at the bottom of the screen (more on the Dock follows). Clicking on the green button, which fills with a plus sign, maximizes the window, expanding it to fill the screen.

These circles also help you keep track of which window is active. They're filled with color only when they're in the frontmost window—if a window isn't currently active, the circles are transparent.

Each window's top right corner contains another button, this one with a dot inside. Clicking on this button leads you into something called Single Window Mode, in which only one window is visible at a time. Whenever you open another window, the currently active window is minimized automatically and sent to the Dock.



Shadows and Fog A couple of the new items Apple has added to the Mac's look in OS X might seem frivolous to a no-nonsense user, but these features undoubtedly enhance the look-and-feel of the Macintosh experience. Each window casts a faint shadow on whatever is behind it—and that shadow is partially transparent, making your desktop feel remarkably three-dimensional.

Subtle shading is everywhere in the Aqua interface. Every pull-down menu and dialog box is partially transparent, showing a hint of what's behind it. When you let go of your mouse, menus don't simply disappear—they fade away. And all Mac OS X text is antialiased, featuring smooth edges that are much easier on the eye than is the old-fashioned jaggy type.

The ability to feature hazy shadows, to display smooth-edged type, and to create transparent dialog boxes is pervasive in Mac OS X thanks to Quartz, a new graphics system derived from Adobe's PDF technology (see the sidebar "Behind the Scenes"). But this new graphics power isn't used just for transparent effects: just about everything you do with your mouse in Mac OS X has an immediate response. If you drag a window around, the entire contents of that window move. That doesn't sound like much, but keep in mind that when you move a window in the current Mac OS, all you really move is a gray outline of that window. The actual window only moves once you've released your mouse button. Similarly, when you resize a window, you actually see the size of the window change as you're dragging.

Finder Ever since Apple previewed a version of Mac OS X that used a completely different Finder interface, Mac users have fretted about the future of the Mac's venerable file browser (see "The Millennium Mac," August 1999).

Those concerns weren't baseless. Mac OS X does indeed offer a very different sort of Finder, one that will undoubtedly appeal to many Mac users and repel others. But it also provides all the functionality of the old Finder. And that means that those who prefer today's method of finding and copying files will be able to continue using their Mac more or less as they have. By default, however, the new Finder keeps to itself. When you double-click on a folder, the Finder window updates to display the contents of that folder.

Whether you prefer the old method or the new, here's what the new Finder will look like: the Finder's window has a row of buttons at the top, reminiscent of Mac OS 9's Sherlock 2 interface. If you click on one of these buttons, you'll be taken to a specific location on your Mac: the Computer button shows available drives and your network connection; Home takes you to your home folder (especially important if your Mac is used by several different people); Apps leads you to the home of all your programs; Docs to where you store your documents; Favorites to a collection of commonly visited parts of your Mac; and People to the folders of all the people with whom you share your Mac.

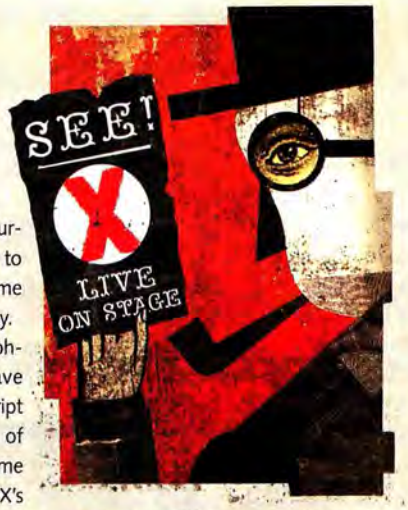
Next to these buttons is a View button, which lets you switch among three different ways of viewing the contents of a Finder window: List, Icon, and Browser. The List and Icon views are basically the same sorts of view your Finder has today; the Browser view is a multicolumn window that lets you view several levels of a hard drive at once. When you click on a folder in a column list, the contents of that folder are displayed in the next column to the right. If you click on a file, the Finder will try to display a preview of what's in that file—a fast way of seeing if that JPEG image on your disk is the photograph you *think* it is.

Finally, at the top right of a Finder window is a Search box



The New Finder In addition to List and Icon views, the new Finder incorporates a Browser view that lets you see several levels of a hard drive at once. Another nice touch: the new Finder (finally!) includes a Search box.

BEHIND THE SCENES



MAC OS X'S INTERFACE refinements will undoubtedly make the Mac more elegant than ever. But what's going on under the hood in Mac OS X will make this operating system more powerful, stable, and adaptable than Mac OS 9. Here's a peek at some important improvements.

Speed and Stability Ever had one of your programs bomb and crash your computer? Of course you have. But Mac OS X offers *protected memory,* meaning that OS X ropes every program off in its own space—where a misbehaving program can't harm any other programs.

And you've undoubtedly noticed that sometimes your Mac really slows down when you've got multiple programs running, especially if they're trying to perform a task such as downloading a file from the Internet. That's because right now, every running program gets to take as much processor power as it needs. Here, too, Mac OS X plays traffic cop—the operating system itself determines how much processing time individual programs get. As a result, the program you're currently using is much less likely to bog down just because some other program is churning away.

Powerful Graphics Graphics and publishing pros have depended on Adobe's PostScript technology since the dawn of desktop publishing. Those same people will cheer Mac OS X's new graphics engine, called Quartz, which is based on Adobe's Portable Document Format (PDF). Quartz also includes powerful compositing features—such as the transparency effects used in the new Aqua interface design—which will undoubtedly be put to use by high-end graphic design programs.

Gamers will be pleased by the performance of OpenGL, a 3-D–graphics standard that enjoys wide support throughout the computer industry. OpenGL is tightly integrated with Mac OS X; this should make Macs mind-bogglingly awesome game machines.

Compatibility Mac OS X includes new features that let you run your old Mac applications without a hitch. In order to retain compatibility with old software, without sacrificing powerful new features, Mac OS X supports four very different program styles, each with its own strengths and weaknesses.

If you're running an old program that hasn't been updated for Mac OS X, that program runs in what's called the Classic environment. These programs can't take advantage of memory protection or preemptive multitasking. As a result, if one of these programs crashes, all the other programs running in Classic may as well.

A Mac program that's been updated for Mac OS X will run in the Carbon environment. Carbon is a system that lets programmers modify their Mac software enough that it can take advantage of Mac OS X's new features. (Programs modified for Carbon can also run on Mac OS 9—but without any of the Mac OS X special features, of course.)

Developers writing programs for Mac OS X from scratch could use Carbon, but they might instead use Cocoa, a system that Apple claims is easy to use to write software but will not run on OS 9.

Finally, it's important to note that underneath Mac OS X is something called Darwin—essentially a version of the Unix operating system (see "The Beauty of the Beast," April 1999). That means Mac OS X should also be able to run programs written for Unix operating systems, including Linux. While most Mac users will not avail themselves of this opportunity, it will appeal to many power users and Unix heads, who can get the ease of use of the Mac and the power of Unix in a single operating system—Mac OS X.



Springy Things When an item is too large to display inside a window or the Dock, it "springs" out to its full size when needed, and then squishes back down when put away.

similar to those on Web pages—at long last integrating search capability in the Finder rather than forcing users to launch a separate application in order to find items on their hard drives. (After all, what good is a Finder that can't find files?)

Below the row of large buttons is a blue "back" button that functions just like its equivalent in a Web browser: it lets you go back to where you've just been. Next to it is a pop-up menu that displays your current location; if you click on it, it displays other locations you've viewed recently.

The Dock Perhaps the most radical addition to the Mac OS interface in Mac OS X is the Dock, a strip that lives at the bottom of your screen and displays the contents of open windows (you can even opt to have it appear only when you move the cursor to the bottom of the screen, like the Windows task bar).

The Dock can contain anything you want—not just images representing minimized windows but also items you drag into it. That means folders, applications, documents—even links to Web sites. Each item stored in the Dock has its own icon, which can be a thumbnail view of the contents of that item. Applications can also use a Dock icon to show information about the status of a window—for example, a mail program's Dock icon could appear differently if you had new mail waiting. Clicking on an item in the Dock automatically opens its window in your workspace.

The Last Word

Just as Apple's distinctive hardware designs set the Macintosh free from the beige-box syndrome that plagues the rest of the computer industry, Mac OS X's bold new interface stands to do the same for Mac software. But Mac OS X is much more than a fresh coat of paint on the Mac's user interface and much more than a typical operating-system update. During the next year, the new Aqua interface and the technology behind it will begin to change the ways we experience our Macs.

It will take time for these changes to catch on, and only time will tell how favorably—or how quickly—the industry will respond. For now, however, the future looks very, very good. **m**

Macworld.com Editor JASON SNELL has reported on Mac OS X since it was first announced.

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*February 1999 research by King, Brown, & Partners, an independent market research firm, showed that over 100 million web browsers have the Flash Player already installed. For details, please visit www.macromedia.com/shockwave/download/survey/

TOP SECRET OS 9

INSIDER TRICKS TO HELP YOU GET THE MOST FROM YOUR MAC

by Franklin Tessler

JUST AS Q NEVER SEEMS TO RUN OUT OF CLEVER GADGETS for James Bond, Apple keeps inventing new features for the venerable Mac operating system. OS 9 includes a slew of enhancements that make your Mac more secure, easier to share, and more Internet-savvy. (For an introduction to all the new features, see "Mac OS 9," December 1999.) ☛ True, Mac OS X is coming up sometime this year, but this radical new operating system won't be for everyone—at least not right away. If you have a pre-G3 Mac, OS 9 may be the most advanced OS your computer will ever run. And if your work is mission critical—for example, you put out a publication every day on deadline—you may want to wait a while until Apple works out the kinks in OS X. ☛ In the meantime, let us show you how to make the most of OS 9 with these tips and tricks. We've also included a guide to avoiding common problems (see the sidebar "Terminate OS 9 Troubles").

ILLUSTRATIONS BY RON CHAN


9
USER ONE
6
9
USER TWO
6
9
USER THREE
6
9
USER FOUR
6



Tighter Security

In the movies, Agent 007's enemies are always out to steal the free world's secrets. In the real world, your files and other personal information are also vulnerable to tampering, especially if you're connected to the Internet with fast-network technologies that are always on, such as cable or DSL (Digital Subscriber Line). Keep your secrets safe with two of the new OS's best features, Keychain passwords and built-in file encryption.

Pick Your Password One feature in OS 9 may solve the problem of proliferating passwords. No longer will you be tempted to use the same memorable password for all your log-ons. And you won't have to scribble obscure—and fiendishly forgettable—ones on random pieces of paper anymore, either. OS 9's Keychain—a feature resurrected from System 7 Pro—stores them all in one convenient place, under the protection of a master password.

To create a Keychain, go to the Apple menu, choose Control Panels, and then select Keychain Access. Click on Create in the dialog box that appears. Name your Keychain, and type your master password. Beware: Hackers commonly run programs that try every word in the dictionary to crack into people's computers. Unfortunately, they don't usually have to try too hard since many people slyly use the word *password*.

Unlock File Servers To add a file-server password to your Keychain, first make sure you've unlocked the Keychain using the pop-up menu in the Control Strip's Keychain module. Then simply follow the steps you always do to log onto your file server. To the right of the field where you usually enter your password, you'll see the Add To Keychain check box. Once you've selected this, you'll never have to remember that particular password again (unless, of course, you have a serious system crash—but heck, that's why you back up your computer regularly . . . right?).

Unlock the Net One of the most promising uses for the Keychain is to store all your *Web* passwords. Unfortunately, at this point you can do this only with a handful of password-protected sites, mostly associated with professional organizations (for example, The Chronicle of Higher Education's site, www.chronicle.com). Those few Web sites let you log on in a browser-generated dialog box, rather than via a form embedded in a Web page.

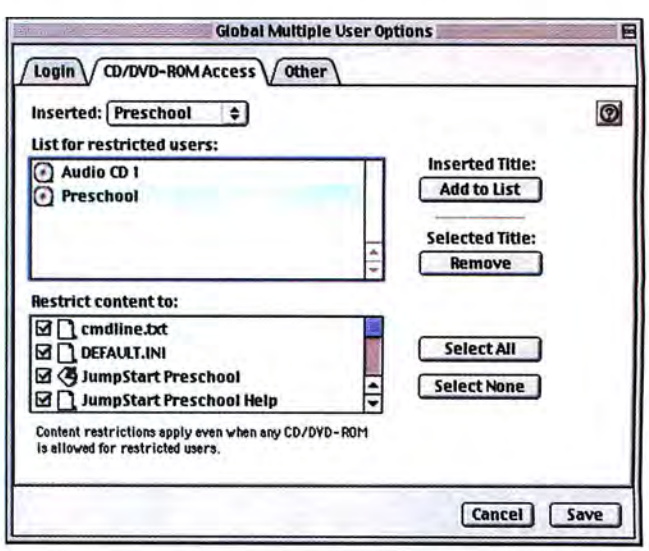
Still, if you commonly visit a site like this, give it a try. To add a Web site to the Keychain when you're using Microsoft Internet Explorer, go to the site and sign on using your name and password. After you're transferred to a new page confirming a successful log-on, drag the URL from your browser's address field to the Mac desktop. If you use Netscape's browser, you have to copy the URL into a word processor or text editor before dragging it to the desktop. Finally, drag the URL from the desktop into the open Keychain Access window, which prompts you to reenter your user name and password. From then on, you can use the Keychain to sign onto the Web site without reentering your information.

Web surfers who need more than the Keychain can offer may want to try Alco Blom's $25 shareware utility, Web Confidential (www.web-confidential.com). This handy program, which also stores account numbers and other sensitive information, lets you add password-protected Web sites to a new menu that appears in your browser's menu bar.

Don't Get Caught Sleeping It's a good idea to set your Keychain to lock automatically when you step away from your Mac. After all, what's the good of a key if you leave your door unlocked? To



Her Own Image If you're using OS 9's Multiple Users feature, there's an easy way to make it more fun for the youngest members of your family to log onto your Mac. Include their photos in the log-on screen.



Dual Personality CDs and DVDs that have separate audio and video tracks appear as *two* icons on the Mac desktop. You must trash the audio-disc icon if you want to add the disc to the master list of approved titles for your kids.

do this, open the Keychain Access control panel and unlock the Keychain. From the Edit menu, choose Keychain Settings (the actual menu item will be the name of your Keychain, followed by *Settings*) and reenter your Keychain password. At the bottom of the resulting window, you'll see an option to lock the Keychain after however many minutes of inactivity you choose. If you're using a PowerBook or iBook, also choose the Lock When The System Sleeps option.

Protect Your Keychain Guard your Keychain as scrupulously as Bond would guard the keys to the British Secret Service headquarters. Unfortunately, with OS 9's Multiple Users feature turned on, you can unintentionally lose access to the Keychain. If you use the Keychain control panel to change your password, you will no longer be able to unlock it. The secret is, always change your password from the Multiple Users Log-on window.

Take Your Keys with You When you travel, carry your passwords with you by copying the Keychain file to a floppy disk or other removable media. On your own computer, you will find this file in the Keychain folder inside the Preferences folder of your Mac's System Folder. When you're using another computer as a visitor (see the discussion of the Multiple Users feature that follows), the Keychain file goes in a different place—your personal folder in the Users folder at the root level of the hard drive. Once you find your folder, look inside for the Keychain Preferences folder; put the Keychain file there.

Encrypt Your Files James Bond wouldn't leave sensitive files out in the open, and you shouldn't either. OS 9's file-encryption feature lets you protect files you don't want others to see, such as those containing your Quicken data or personal memoirs.

To encrypt a file, select it in the Finder and choose Encrypt from the File menu, or control-click on the file to bring up the contextual menu. Enter a password at least five characters long. A check box (selected by default) lets you add the password to your Keychain, so you don't have to choose a phrase that's easy to remember. You can spot an encrypted file by the small gold key on its icon. To decrypt a file, simply double-click on it.

Unfortunately, you cannot encrypt folders. But you can get around this by using Aladdin Systems' (www.aladdinsys.com) DropStuff, a compression program bundled with Mac OS 9. Drag the folder you wish to encrypt on top of the DropStuff icon, wait for the files to compress, and then encrypt the resulting file (the icon of a stuffed file, or archive, is a vise squeezing a floppy disk). When you want to decrypt the folder, just double-click on it and enter your password.



After you decrypt a compressed folder, your Mac may ask which application to open it with. Choose StuffIt Expander—a decompression program from Aladdin Systems, also bundled with Mac OS 9.

Decrypt without Viewing When you open an encrypted file, the Mac OS launches its related application. If you're short on time and don't need to see the file, however, you can decrypt it without viewing it. Open it with the Apple File Security program, which you'll find in OS 9's Security folder inside the Applications folder. Or, if you're already running Apple File Security, simply drag the file onto the program's icon.

Multiple-User Secrets

Mac OS 9's security features aren't as bulletproof as James Bond's car—anyone can

SHARE OVER THE NET

IF YOU USE MACS AT DIFFERENT LOCATIONS, THERE'S NOTHING MORE FRUSTRATING than leaving a crucial file on the *other* computer's hard drive. With OS 9 installed, exchanging files with a Mac on the other side of the world is as simple as accessing the computer in the next office, as long as both are connected to the Internet (and turned on). Here's a step-by-step guide.

Step 1 Turn On AppleTalk
Do this in the Chooser or the AppleTalk control panel. AppleTalk must be active for TCP/IP file sharing to work under OS 9, even if you don't have an AppleTalk network.

Step 2 Activate File Sharing
You'll find this option in the File Sharing control panel. Make sure to set up access privileges for anyone who needs to use your Mac. (OS 9 folds the functionality of the old Users & Groups control panel into File Sharing.)

Step 3 Decide What to Share
In the Finder, select the volumes and folders you want to share, and specify access privileges using the Sharing section of each item's Get Info window.

Step 4 Get Both Computers Online
Make sure the computer with which you want to share files is connected to the Internet, and write down its IP address from the TCP/IP control panel.

Step 5 Set Up the Other Mac
At the other end, open the Chooser and select AppleShare. Click on Server IP Address and enter the numeric IP address from Step 4. Specify the items you want to share, enter the host computer's password, and you're done. To save time, make an alias of the shared volume or folder; that way, you won't have to reenter the host IP address to reconnect. You can also add AppleShare servers to your Keychain so you no longer have to remember the servers' passwords.—FRANKLIN TESSLER

TERMINATE OS 9 TROUBLES

FROM SHERLOCK 2 TO MULTIPLE USERS, THERE'S NO DOUBT THAT Mac OS 9 has much to recommend it. However, as with any operating-system upgrade, you'll need to watch out for a few thorns hidden among the roses. These tips will help you make sure your upgrade is as smooth as possible. For even more troubleshooting help, go to www.macfixit.com.

Tip 1 Avoid Application Conflicts

It's the upgrade chain reaction: you upgrade your OS, you launch Microsoft Word—or some other program you depend on—and it crashes. Again and again. What you've got is an application conflict, common to any OS upgrade. And the only solution is to upgrade *all* your existing programs. Like any other operating-system update, OS 9 has its fair share of these conflicts—and one new snag: Error Type 119.

The origin of this problem lies in changes Apple made to the way the Mac OS keeps track of files. The good news is, you can now open larger files and have more files open at once (a maximum of 8,169) than you could with any previous version of the OS. The catch is that some software will still attempt to track files using the old method—and they won't be there. The result? Error Type 119.

Adobe quickly released fixes for a couple of its popular applications, Adobe Type Manger (both the free and Deluxe versions) and Adobe Type Reunion (the fixes are available at www.adobe.com/support/downloads/new.html). If you don't think you use Type Manager, be aware that some other graphics programs, such as Multi-Ad Services Creator and Creator 2, install and use it in the background.

The Error Type 119 bug also bit Netscape Communicator. However, in this case you can fix things without an update: just remove the Talkback folder from the Communicator folder. Even Apple's own software is not immune: you'll need the AppleWorks 5.0.4 Updater (included on the Mac OS 9 CD) to bring AppleWorks up-to-date.

To find other less obvious but equally stricken programs, download and run Alsoft's free utility, the Mac OS 9 File Manager Compatibility Checker (www.alsoft.com/AskAl/download.html).

Tip 2 Conquer Control Panel Confusion

Another kink you'll encounter is that a few control panels don't get along well with Mac OS 9. Some older control panels traditionally loaded into the same memory space the Finder uses. This used to be OK, but Mac OS 9 requires control panels to open in their own memory space, so these older control panels will not function.

Fortunately, Apple built a solution into Mac OS 9. You can force the Mac to let older control panels open in Finder memory space by holding

access a Mac running OS 9 by booting from an alternate start-up volume, for example. But OS 9's Multiple Users feature does a lot to protect you against low-tech attacks on your sanity. For example, Multiple Users can ensure you'll never have to worry about your kids leaving the desktop in disarray.

Maintain a Secret Identity The Multiple Users feature lets you set up a Mac so that more than one person can use it, each with his or her own *private* set of options, preferences, and files. For example, if your children use your Mac, you won't have to worry about important documents disappearing or a new 'N Sync desktop photo ambushing you.

Turn on and set up the Multiple Users option by selecting the Multiple Users control panel. The dialog box that appears asks you to decide what kind of access different users will have to the computer (you're considered the Owner and have full access): Normal (access to just about everything), Limited, or Panels (very basic access, with a simplified interface, ideal for kids and computer novices).

No matter what kind of access they have, whenever they log on, users will see the desktop just as it was when they logged out, regardless of who else used the computer in the meantime.

Make a Photo ID The Multiple Users feature means the youngest members of your family can use your computer with ease. To help them get started, paste their photograph in the log-in screen. That way they won't even need to read their name to choose the account.

To add a custom picture, open your child's Setup window in the Multiple Users control panel and click on the small triangle to display setup details. Next, in any Web browser, open the file containing the child's picture. Finally, drag the picture from the browser window onto the picture frame (see the screen shot "Her Own Image").

Restrict CD Access Worried about what kinds of games your kids are playing? Multiple Users lets you control just what CDs and DVD-ROMs they can use. If you decide to restrict access, you'll need to make a master list of approved titles. To do this, click on the Options button in the Multiple Users dialog box. Click on the CD/DVD-ROM Access tab, and then insert a disc into the computer and click on the Add To List button. You can add a disc as a whole, or only specific items on it. (Of course, this can be time-consuming if you have a large library.)

Be aware that discs with separate audio and video tracks have *two* icons on the Mac desktop, one for the audio and another for the application (see the screen shot "Dual Personality"). You have to drag the audio-disc icon to the Trash before you add the disc to your master list—otherwise you won't be able to select the CD's program content.

Avoid the Cancel Trap A gaping security hole in OS 9's Multiple Users software lets other users access your Mac without your password. How? If you set Multiple Users to log out after a specified period of inactivity, and you have any open documents with unsaved changes, OS 9 asks if you want to save changes or cancel: anyone who chooses to cancel gets full access to your computer. To avoid this pitfall, save all documents before you walk away from your Mac.

Install Applications Carefully Some applications don't coexist peacefully with OS 9's Multiple Users feature. For example, the first time you run any Microsoft Office application, a special installer program copies shared libraries and other software components to your hard drive. Users that can't access the installer won't be able to run the main application. To prevent this, always install applications using the Owner account and make sure they function properly before you grant access to other users. America Online users, take note: Those with Limited and Panels access will not be able to get online

down the ⌘ and control keys while double-clicking on the control-panel icon. You'll need to do this to use the Customize command of Microsoft Office 98's Office Manager, for example.



Tip 3 Decode the Mystery of Disappearing Folders

At some point after you install Mac OS 9, a folder's icon may mysteriously change into a blank-document icon. When you try opening this folder, you get a cryptic message that says: "The package could not be opened. . . . Try reinstalling the package."

A *package* is OS 9's way of grouping an application and related files (such as its Help files) into a single folder. The Finder views a package almost as an application. That is, the package acquires the icon of the application, and when you double-click on it, the application is launched. All the additional files in the package are hidden from view, so you cannot modify or delete them.

What's happening is that an ordinary folder has been mistakenly set to be recognized as a package (Apple claims that this could happen after a system crash). This leads to the error message and the blank icon. Thankfully, Apple has provided a simple fix. All you have to do is drag the problem folder's icon to the Package First Aid utility (which you'll find hidden at the bottom of the Utilities folder on the OS 9 CD). Package First Aid then returns the folder to its ordinary status.

Tip 4 Defuse DVD Dangers

There's a special OS 9 problem just for iMac DV owners. If you upgrade from OS 8.6 (the OS that comes loaded on most of these Macs) to Mac OS 9 by doing a clean install, you will discover that DVD Player no longer works. Instead, whenever you try to access the player, you'll see the error message "DVDRuntimeLib could not be found."

To avoid this, simply drag three critical DVD extensions—DVD Navigation Manager, DVD Region Manager, and DVDRuntimeLib—from the Extensions folder in your old System Folder to the same folder in your new one.—TED LANDAU

unless the Owner moves the entire AOL application folder to the Application Support folder inside the System Folder.

Solve Mysteries with Sherlock 2.0

No secret agent can survive for long without up-to-date intelligence. To help you dig for information on your hard drive or the Internet, OS 9 ships with an updated version of the Sherlock search engine. Although the QuickTime-inspired interface is drawing its share of criticism, there are plenty of new tricks worth cheering about.

Customize Channels Sherlock 2 helps you find information on the Net by confining your searches to groups of related sites, called channels. Mac OS 9 ships with six built-in Internet-searching channels: Internet, People, Shopping, News, Apple, and Reference. You can create your own channels with other Sherlock plug-ins. (Apple maintains a repository of plug-ins at www.apple.com/sherlock/plugins.html.)

You can add a new plug-in to any channel by dragging it into the channel's window. To copy a plug-in from one channel to another, option-drag it to the new channel. (If you try to delete one of the built-in channels, however, Sherlock resurrects it from the Internet.)

Find Files Faster Sherlock 2's revamped Files channel adds welcome new possibilities. When you type ⌘-F in the Finder, Sherlock launches with the Files channel selected and mounted volumes displayed in a list. To restrict your search to a particular folder or group of folders, drag them onto the Volume window.

Customize File Searches Dragging any file, folder, or volume into Sherlock 2's More Search Options window copies its attributes into the search fields for quick customized searches. You can even save search criteria in Sherlock's pop-up menu for easy access—handy if you regularly search for files within a certain size range, for example.

OS 9 Grab Bag

In addition to improvements in security, file sharing, and searching, Mac OS 9 boasts an array of other enhancements that make the Macintosh more entertaining and convenient to use.

Take the Secret Entrance In OS 9's About This Computer window, you can do more than see how much memory the system and any running applications are using. Open files by dragging them onto the appropriate application in the window; double-click on the Mac OS icon to open the System Folder.

Enjoy the Sights and Sounds OS 9 splits the functions of Mac OS 8's Monitors & Sound control panel into two separate panels. The new Sound control panel offers several entertaining new *stereo* alert sounds—such as ChuToy (a squeak familiar to dog owners), Laugh (a child's giggle), and Purr (which sounds suspiciously like a *Star Trek* tribble)—and also lets you balance the stereo speaker volume by playing white noise through one speaker at a time.

Set Up Speedy Shortcuts On newer Macs, including iMacs, iBooks, bronze-keyboard PowerBook G3s, blue G3s, and G4s, you can use OS 9's Keyboard control panel to program the function keys to open any application or document.

See the Campus Option-click on your Apple menu and choose About The Finder from the contextual menu to get a view of the Cupertino locale where the magic happens.

The Last Word

Mac OS 9 may not be Apple's most mind-blowing upgrade, but if you take advantage of these tips and shortcuts, you may find that its security features in particular can set your mind at ease. After all, as any James Bond fan will tell you, it's not enough just to get your work done—you should have fun doing it. **m**

Contributing Editor FRANKLIN TESSLER is always on the hunt for new Mac OS secrets.

THE 15TH ANNUAL

EDITORS' CHOICE AWARDS

The last year of the 20th century was, all in all, a great year for the Macintosh. As we head into year 17 of the Macintosh Era, it's time for *Macworld*'s annual look at the products that improve the lives of Mac users—products that make using your Mac easier, let you do your job more effectively, or simply give you freedom you never had before. ■ We celebrate the crème de la crème of the Mac world with our annual Editors' Choice Awards. In this banner year for the Macintosh, our decisions were tougher than ever. After surveying every Mac product released between November 1, 1998, and November 1, 1999, we nominated 78 products, 3 in each of 26 categories. We recognize these products—as well as the winners of our five World Class Awards—not just for their overall quality but also for the innovative features they've brought to the Mac in the past year. ■ It's fitting that these awards go not to people and companies who rest on past laurels but to the true innovators of the Macintosh world. Here's hoping that many more years of Mac innovation lie ahead of us.

Photography by Kevin Candland


1999
Macworld



GENERAL MAC

The 15th Annual Editors' Choice Awards

UTILITY SOFTWARE

Winner Alsoft's **DiskWarrior 1.1** ($70; www.alsoft.com, 800/257-6381) is an excellent ax to add to your disk-repair and -maintenance arsenal. DiskWarrior's ease of use, speed, and new method of fixing disk problems make it a powerful and notable disk-maintenance product.

Runners-Up Power On Software's **Action Utilities Collection** ($90; www.poweronsw.com, 800/344-9160) features Mac OS 9–ready revisions of venerable tools in addition to handy, brand-spankin'-new utilities. Netopia's **Timbuktu Pro 5.2.1** ($100; www.netopia.com, 800/485-5741) continues to be an essential part of any network-administration tool kit.

PRODUCTIVITY SOFTWARE

Winner The wealth of tax help available in Intuit's **MacInTax Deluxe 98** ($50; www.intuit.com, 800/446-8848) is part of what makes this program so valuable. It has relevant information right where you need it, such as FAQs on almost every page.

Runners-Up AEC Software's **FastTrack Schedule 6.03** ($199; www.aecsoft.com, 800/346-9413) helps you keep track of a job without requiring you to learn a lot of theory. The latest version lets you link tasks automatically and exchange schedules with Microsoft Project. MetaCommunications' **Job Manager 2.0** ($3,699; www.jobmanager.com, 800/771-6382) has extensive job-tracking and -costing features and is especially useful for commercial printers, publishers, and design shops.

DATA-MANAGEMENT SOFTWARE

Winner It's simple: SPSS's **DeltaGraph 4.5 for Macintosh** ($299; www.spss.com, 312/651-3000) lets you produce better-looking charts than you can with Microsoft Excel or PowerPoint. New in version 4.5 is a slew of features that accommodate the Web, such as the option of exporting JPEG graphics or QuickTime 3 slide shows.

Runners-Up One of the quickest ways to analyze data residing in piles of accumulated Excel spreadsheets is to use Data Description's **Vizion** ($150; www.datadesk.com, 800/573-5121). **MYOB Accounting Plus 8** (199; www.myob.com/us, 800/322-6962) has the essential components you need in a small-business accounting system. Version 8 includes time-billing support and links to Microsoft Office 98.

EDUCATIONAL SOFTWARE

Winner Edmark's entire Thinkin' Things series is outstanding at helping children learn and have fun at the same time. **All Around FrippleTown** ($30; www.edmark.com, 800/691-2985) is the newest of the bunch. Aimed at 4- to 8-year-olds, it teaches such important skills as following map directions and identifying patterns.

Runners-Up The most beautiful children's software to come out this year is VTechSoft's **Uncle Albert's Magical Album** ($30; www.vtechsoft.com, 800/742-1050). Reader Rabbit is a longtime friend to tots trying to make sense of those characters we call letters; The Learning Company's **Reader Rabbit's Complete Learn to Read System** ($70; www.learningco.com, 800/716-8506) comes not only with software but also with flash cards, storybooks, and a workbook.

MP3 PRODUCT

Winner Diamond Multimedia Systems' **Rio 500** ($270; www.diamondmm.com, 800/468-5846) is smaller than a sardine can, yet it allows you to tote more than an hour's worth of your favorite MP3 tunes wherever you go. With easy-to-use controls, a simple drag-and-drop USB interface, and no

moving parts, the Rio is your key to making sweet music.

Runners-Up Casady & Greene's entry into the audio market is **SoundJam MP 1.1.1** ($50; www.casadyg.com, 800/359-4920), a player/encoder combination with a modifiable interface and support for streaming audio. Xing Technology's **AudioCatalyst 2.01** ($30; www.xingtech.com, 805/783-0400), a speedy MP3 encoder with superior encoding quality, is ideal for turning your CD collection into small, portable files.

GAME

Winner It's hard to believe that Bungie Software could improve on the medieval combat classic Myth: The Fallen Lords, but with improved graphics and loads of new game-play elements in **Myth II: Soulblighter** ($49; www.bungie.com, 312/397-0500), the company did it. This sequel also features a wider range of environments and a much improved interface.

Runners-Up The master of real-time strategy games, Blizzard Entertainment followed up the classic WarCraft series with **StarCraft** ($50; www.blizzard.com, 800/953-7669), featuring both an epic single-player campaign and intense multiplayer action. With superbly rendered, detailed models of F-16 avionics, weapons, and threats, MacSoft's **Falcon 4.0** ($50; www.wizardworks.com/macsoft/, 800/229-2714) is the most realistic combat flight simulation on the Mac today.

SCIENCE/ENGINEERING SOFTWARE

Winner Wolfram Research gave **Mathematica 4** ($1,495; www.wolfram.com, 800/965-3726) more than a face-lift in its latest upgrade—the program's speed has been improved drastically, as have its HTML-creation, word-processing, and printing features. Add to that Mathematica's outstanding documentation and strong educational support, and you've got a powerful and approachable technical application.

Runners-Up Diehl Graphsoft's **VectorWorks 8.0.1** ($895; www.diehlgraphsoft.com, 888/646-4223) is a brand-new product grown from the solid roots of its predecessor, MiniCAD. VectorWorks is easier to use, and it also supports workgroups. Ashlar's **Vellum Solids 99** ($3,995; www.ashlar.com, 800/877-2745) is an impressive industrial-level CAD tool with a host of new features.

STORAGE HARDWARE

Winner ProMax Technology has accomplished a neat engineering feat. For the first time, Mac users can buy a PCI card—the **TurboMax** ($129; www.promax.com, 800/977-6629)—that works with fast, inexpensive Ultra ATA/DMA EIDE hard drives. Disk drives striped in pairs as RAID Level 0 volumes provide impressive speed at an affordable price, giving us another reason to thumb our noses at the PC guys.

Runners-Up The perfect companion to your cute new iMac is Sony's **Spressa USB Plus CRX100E/X2** ($329; www.sony.com, 800/352-7669). There are other USB CD-RW drives, but we were particularly impressed by Sony's solid engineering and the drive's good speed. Digital-camera makers could do us a big favor and standardize on one media format. Until then, Microtech's **USB CameraMate** ($89; www.microtechint.com, 800/626-4276) is a godsend. It can read SmartMedia cards, CompactFlash digital film, and the IBM family of microdrives.

CONSUMER HARDWARE

Winner If you haven't been wowed by one of Palm Computing's Palm organizers, it's only because you haven't used one. The **Palm IIIe** ($179; www.palm.com, 800/881-7256) comes with the same high-contrast screen, RAM, and applications as the top-of-the-line Palm V, but without the hefty price tag.

Runners-Up If you listen to CDs or MP3s on your Mac, you'll be wowed by SRS Labs' **Wow Thing** ($30; www.srslabs.com, 800/243-2733), a little box that uses custom algorithms to make music issuing forth from tinny speakers or headphones attached to your Macintosh sound a whole lot better. With its clever optical sensor, Microsoft's **IntelliMouse Explorer** ($75; www.microsoft.com, 800/426-9400) will free you from gummy mice and mouse pads forever.

ACCELERATION HARDWARE

Winner Helping extend the useful life of older PCI Power Macs and compatibles, the **XLR8 CarrierZIF** ($179; www.xlr8.com, 888/957-8867) combines fast G3 performance with the flexibility of a socket upgrade. Excellent hardware compatibility and a CPU trade-up program go toward making it a standout among G3 accelerators.

Runners-Up Quality QuickTime playback, great looking 3-D, and a great price make the **ATI Rage Orion** ($199; www.atitech.com, 905/882-2600) a solid value for those looking to add a second graphics adapter to their system. Unmatched 2-D speed, excellent 3-D performance, and its unique support for 3-D goggles make Formac Electronic's **ProFormance 3** ($259; www.formac.com, 925/251-0100) the graphics card of choice for serious Photoshop users and hard-core Mac gamers alike.



IMPACT AWARD

In 1999 digital music came into its own, and the format known as MP3 led the way. A technology that allows CD audio to be compressed to one-tenth its original size, MP3 enabled Mac users to change the way they listened to music, whether that meant turning PowerBooks into portable jukeboxes or tuning into Internet-based radio stations rather than those of the AM-FM variety.

Casady & Greene's SoundJam MP, which both plays and encodes MP3 files, is our favorite MP3 player—but it's not the only one. @soft's Macast and Panic Software's Audion each have unique appeal. Xing Technology's AudioCatalyst is our favorite MP3 encoder, but SoundJam MP and Proteron's N2MP3 are also powerful programs that let you create MP3 files. And Diamond Multimedia's Rio 500 is the first and best MP3 player on the Mac, giving Mac users the ability to take tunes with them.

All these companies deserve praise for helping bring MP3 to the Mac and allowing Mac users to partake in the ongoing digital-music revolution.



PUBLISHING

The 15th Annual Editors' Choice Awards

PUBLISHING SOFTWARE

Winner It has a few rough edges, but the much anticipated **Adobe InDesign 1.0** ($699; www.adobe.com, 800/562-3623) represents the first serious competition to QuarkXPress in many years. InDesign sports an innovative plug-in architecture that makes adding new features easy, but it offers publishing professionals something even better: a choice of page-layout engines. Even QuarkXPress users stand to benefit.

Runners-Up Adobe added useful new publishing and collaboration tools in **Adobe Acrobat 4.0** ($249; www.adobe.com, 800/833-6687), although Mac users had to wait a few extra months for all the features introduced in the Windows version. Main Event Software's **PhotoScripter 1.0** ($299; www.mainevent.com, 800/616-8320) brings AppleScript functionality to Adobe Photoshop, allowing publishing pros to better integrate the image-editing software into their workflow.

GRAPHICS SOFTWARE

Winner Painting tools have taken a great leap forward in **MetaCreations Painter 6** ($399; www.metacreations.com, 800/846-0111), the most significant upgrade to the natural-media graphics program in many years. Painter's brushes are more realistic than ever, and the streamlined interface makes the program a little more accessible for new users. The upgrade also offers enhanced support for Wacom's Intuos tablets.

Runners-Up For those tired of "me too" painting programs, Synthetik Software's **Studio Artist 1.1** ($295; www.synthetik.com, 415/864-6582) adds a new wrinkle, with an abstraction engine that lets you create wild variations on a base image. Deneba Software's **Canvas 7** ($375; www.deneba.com, 305/596-5644), an upgrade of the integrated graphics package, adds an innovative SpriteEffects function that lets you apply Adobe Photoshop filters to vector objects.

3-D–GRAPHICS SOFTWARE

Winner In a year that saw plenty of cool-looking 3-D–graphics programs, Play's **Amorphium** ($150; www.play.com, 800/306-7529) stood out for its intuitive interface, real-time 3-D–sculpting capabilities, and ultrafast renderer. Even nonartists can create animations that are sure to amaze. Although aimed primarily at hobbyists and 2-D artists, Amorphium was used to create some of the special effects in *Austin Powers: The Spy Who Shagged Me.*

Runners-Up **MetaCreations Canoma 1.0** ($499; www.metacreations.com, 800/846-0111) performs a seeming miracle: converting 2-D photographic images into 3-D scenes you can place on the Web. **MetaCreations Poser 4** ($299; www.metacreations.com, 800/846-0111), an upgrade of the popular character-animation tool, adds a host of features for professional 3-D artists.

DIGITAL-VIDEO SOFTWARE

Winner It's been a long three years since the last upgrade, but **Adobe After Effects 4.1** ($689; www.adobe.com, 800/833-6687) was worth the wait. New special effects, an internal-playback function, and improved integration with Adobe's other graphics applications add up to a must-have upgrade for digital-video professionals. The interface better accommodates professional work and brings After Effects into line with the interface standards already found in Photoshop and Illustrator.

Runners-Up It has stiff hardware requirements and lacks support for some DV camcorders, but Apple Computer's **Final Cut Pro 1.0.1** ($999; www.apple.com, 800/795-1000) combines video-capture, editing, animation, and com-

positing tools, all within a beautiful, efficient interface. **Commotion 2.1** ($2,495; www.puffindesigns.com, 800/401-0009) is a solid upgrade of the professional video-painting software from Puffin Designs.

AUDIO SOFTWARE

Winner In a year when CD-R and CD-RW drives became mass-market peripherals, Emagic's **WaveBurner 1.0** ($199; www.emagic.de, 530/477-1051) stood out as the best audio-CD–recording software on the Mac. It's easy to use, lets you record audio directly instead of using a separate program, and is affordably priced.
Runners-Up Steinberg's **Cubase VST 4.1** ($399; www.us.steinberg.net, 818/678-5100) is a solid and easy-to-use MIDI sequencer with full drag-and-drop support. **BarbaBatch 3.0** ($395; www.macsourcery.com, 800/622-7723), developed by Audio Ease and distributed by MacSourcery, continues to be the best audio-conversion utility on the Mac. It's easy to use, supports numerous file formats, and produces great-sounding audio.

DIGITAL CAMERA

Winner The **Coolpix 950** ($999; www.nikonusa.com, 800/526-4566), from Nikon, tops our list when it comes to overall features and price. Using a 2.11 million–pixel CCD, this camera effortlessly delivers impressive, detailed images. Its accurate autofocus, 8MB of default memory, and high-resolution 2-inch LCD display will satisfy most consumers. And professionals will find it an excellent alternative to more-expensive high-end digital cameras.
Runners-Up For more-advanced users, the versatile **Olympus C-2500L SLR** ($1,499; www.olympus.com, 800/622-6372) features a 2.5 million–pixel CCD, manual and autoexposure options, and no waiting between shots. It also accepts various lenses, for the perfect shot. Kodak's megapixel **DC265** ($899; www.kodak.com, 800/235-6325) provides great color accuracy, burst capture, and USB support.

DISPLAY

Winner The **21" Apple Studio Display** ($1,499; www.apple.com, 800/538-9696), with its landing-pod design, is as innovative as it looks. It has excellent sharpness as well as rich, saturated, accurate color. The display uses an embedded processor to track phosphor aging, giving you a lifetime of true color.
Runners-Up We have seen the future, and it is digital. Miro Displays' **Radius Artica Flat Panel Display** ($2,795; www.mirodisplays.com, 888/647-6462) is a bright, high-resolution flat-panel display and the first digital display for the Mac. The included Formac digital-interface video card provides superior sharpness and true 24-bit color. The **17" Apple Studio Display** ($499; www.apple.com, 800/538-9696) offers crisp text and images, excellent color rendition, and easy-to-use hardware controls without breaking the bank.

PRINTER/IMAGING DEVICE

Winner Photo-realistic printing on the Mac has surged forward in quality, features, and speed. Using proprietary color-layering technology, along with 2,400-dpi resolution, Hewlett-Packard's **HP DeskJet 970Cxi** ($399; www.hp.com/go/mac-connect/, 800/752-0900) delivers stunningly crisp color that resists fading. Whisper-quiet in operation, it is the only ink-jet with a standard duplexer.
Runners-Up Ease of use and tight integration of its roles make the **Brother MFC-8600** ($599; www.brother.com, 800/276-7746)—which serves as a printer, copier, fax machine, and scanner—an ideal answer for real-estate–challenged desktops. With a patented ink system that allows economical business color and great-looking photo-realistic printing, Canon Computer Systems' **BJC-6000** ($199; www.ccsi.canon.com, 800/652-2606) gives you the best of both worlds.



HARDWARE PRODUCT OF THE YEAR

It might seem strange that in a year that saw the release of brand-new Macs such as the iBook and the Power Mac G4, our award for Hardware Product of the Year would go to what is essentially an update. Ah, but what an update!

Imagine a greater challenge than improving what is arguably the most important Mac product in a decade—so important that it has single-handedly resurrected Apple, revived the Mac market, and made the Apple logo as desirable and recognized a brand as Gap, Nike, or Disney. Yet that is exactly what Apple achieved with the **iMac DV**—better in every possible respect without betraying the iMac's two defining characteristics: striking design and affordability.

Still selling for $1,299, the iMac DV replaces the CD-ROM drive with a DVD-ROM drive capable of playing movies, mediocre 3-D capabilities with state-of-the-art ATI 128 RAVE 3-D, cheesy speakers with a Harman Kardon sound system, a 333MHz G3 with a 400MHz G3, 32MB of RAM with a minimum of 64MB of RAM, and a 6GB drive with a 10GB drive. It also has high-speed FireWire ports, and the list of improvements goes on and on.

But the iMac DV has more than just a refined design and feature set—it also adds to the iMac's core competency. The first incarnation of the iMac was successful as an Internet appliance, but the iMac DV is poised to deliver digital video to the masses. Thanks to iMovie, a breakthrough video-editing application, the iMac DV makes movies almost as easily as original iMacs surfed the Web. Now *that's* an update!

SOFTWARE PRODUCT OF THE YEAR

One of the Mac's greatest strongholds is in the world of Web publishing. And **Macromedia Dreamweaver 2** is top dog among Web-page–creation programs. The program's first edition was a bit of a disappointment, with a feature set that lagged sorely behind that of its chief competitor, Adobe GoLive. But what a difference a version makes—Dreamweaver 2 closed the gap in record time, adding not only all the must-have features every Web designer needs but also a bunch of unique improvements and a remarkable level of customizability.

As the Web grows in popularity, so does the importance of the professionals who build it. With Dreamweaver 2, Macromedia gave those professionals a powerful tool for creating cutting-edge Web sites.



INTERNET

The 15th Annual Editors' Choice Awards

INTERNET CLIENT SOFTWARE

Winner **Microsoft Outlook Express 5 Macintosh Edition** (free; www.microsoft.com, 425/882-8080) offers a collection of features that will satisfy just about any e-mail user out there—and who isn't an e-mail user these days? Although some may find its multipaned interface a bit crowded, there's no denying the power of its hyperlink-rich, database-driven mailbox interface and the ease of its intuitive address book.

Runners-Up If you're transferring files over the Internet, you need Stairways Shareware's **Anarchie 3.6.2** ($35; www.stairways.com), a speedy and easy-to-use FTP (File Transfer Protocol) program with a Finder-like interface. With an inline spelling checker and a slew of other new features, Qualcomm's **Eudora Pro 4.2.1** ($50; www.eudora.com, 800/238-3672) is a welcome upgrade to the stalwart e-mail program beloved by power users everywhere.

WEB-GRAPHICS SOFTWARE

Winner If you could've had only one Web-graphics tool in 1999, **Macromedia Fireworks 2** ($199; www.macromedia.com, 800/457-1774) should have been it. Version 2 improved mightily on an already excellent program, offering solid export features and the ability to apply multiple styles to an object.

Runners-Up An improved interface, powerful new scripting controls, and touches such as streaming-MP3 support make **Macromedia Flash 4** ($299; www.macromedia.com, 800/457-1774) the undisputed leader for adding compact animations and simple interactivity to your Web site. **Adobe Photoshop 5.5 with ImageReady 2.0** ($610; www.adobe.com, 800/492-3623) at long last integrates Web-graphics features into the image-editing institution that is Photoshop and finally allows companion ImageReady to blossom into a full-featured Web-animation and rollover-creation tool.

WEB-AUTHORING SOFTWARE

Winner **Macromedia Dreamweaver 2** ($299; www.macromedia.com, 415/252-2000) sets the standard for innovative HTML-authoring software and is among the best WYSIWYG Web-page editors available. The major upgrade to version 2 added useful features such as a tracing layer and an advanced table editor and encourages users to adapt it to their needs, by making most features extensible.

Runners-Up **Adobe GoLive 4.0** ($276; www.adobe.com, 800/833-6687) builds on its predecessor's strongest assets—great site-management features and ease of use—by offering improved stability and better integration with non-HTML code. The Web editor that continues to aggressively not suck, Bare Bones Software's **BBEdit 5.1.1** ($119; www.barebones.com, 781/687-0700) is an essential tool for every serious Web-site builder who chooses to code by hand.

WEB-VIDEO SOFTWARE

Winner Whether you're publishing on the Web or on CD-ROM, Terran Interactive's **Media Cleaner Pro 4** ($499; www.terran.com, 800/577-3443) will clean up your clips. This is the essential multimedia-compression program, now supporting all major audio and video formats and capable of lossless format conversion.

Runners-Up The preview function and simple drag-and-drop capabilities of Electrifier's **Electrifier Pro 1.02** ($395; www.electrifier.com, 919/968-0701) make it ideal for animating QuickTime

content on the Web. Apple Computer's **QuickTime 4 Pro** ($30; www.apple.com, 800/795-1000) offers channels, new audio and video code, cross-platform integration, and numerous file formats for import and export, making it the most powerful version yet.

SERVER SOFTWARE

Winner Apple's trailblazing **QuickTime Streaming Server** (free; www.apple.com, 800/795-1000) brings the quality of QuickTime to the platform of your choice through open-source licensing of a standards-based server. QuickTime Streaming Server also frees creative professionals by not imposing a per-stream "server tax."

Runners-Up LinuxPPC's **LinuxPPC 1999 Q3** ($32; linuxppc.com, 414/427-8555) brings the power and compatibility of the open-source Linux operating system to Macintosh hardware. StarNine Technologies' **WebStar Server Suite 4.0** ($599; www.starnine.com, 800/525-2580) makes providing many different Internet services simple yet secure. A new modular design, Web-based mail, and speed improvements keep this suite ahead of its peers.

NETWORK UTILITY

Winner Sustainable Softworks' **IPNetRouter 1.4.3.3** ($89; www.sustworks.com, 508/875-8121) makes it possible to put everyone in your home on the Internet without struggling over who gets the phone line. As DSL and cable modems become more popular, IPNetRouter's appeal will certainly continue to grow.

Runners-Up Netopia's **netOctopus 3.5** ($65; www.netopia.com, 800/803-8212) lets Macintosh system managers keep their users updated instead of frustrated, by extending managers' support reach to the remotest desktop. Our networks may be getting just as clogged as our highways, but AG Group's **EtherPeek 4.0** ($995; www.aggroup.com, 925/937-7900) will serve as your eye in the sky, letting you see network traffic and identify trouble spots.

NETWORK HARDWARE

Winner Any computer on the Internet can potentially receive a visit from an unwelcome guest. Sonic Wall's **SonicWall Pro** ($2,995; www.sonicwall.com, 888/557-6642) acts as your Internet doorman. This speedy firewall is able to keep up with the most demanding of networks. Best of all for users in homes and small offices, it's affordable and easy to configure.

Runners-Up Plug-and-play has reached the network with Quantum's **Snap Server (40GB)** ($1,799; www.quantum.com, 888/343-7627). This Ethernet-attached storage device puts a load of storage space on your network without a lot of server headaches. The **OneWorld OfficePort Network Communication Appliance** ($1,899; www.oneworldsystems.com, 877/697-2537) gives small offices shared Internet access via telephone with a single access point. This handy device also has built-in remote access, allowing on-the-road workers to call in.

CROSS-PLATFORM–UTILITY SOFTWARE

Winner Using Miramar Systems' **PC MacLAN for Windows 95/98 Version 7.2** ($199; www.miramarsys.com, 800/862-2526) is the ultimate way to make a PC Macintosh-friendly. The latest version brings faster LAN connections, server messaging, easier installation, and what PC MacLAN users have really been waiting for: support for Apple Remote Access dial-up.

Runners-Up Your best choice for Windows emulation on the Macintosh, Connectix's **Virtual PC 3.0** ($179; www.connectix.com, 800/950-5880) features USB support and fast network access, and it can share your Mac's Internet connection. Thursby Software Systems **Dave 2.5** ($149; www.thursby.com, 817/478-5070), which lets Macs use Windows networks with ease, now supports the Location Manager and Mac OS 9's multiuser features. **m**



TECHNOLOGY OF THE YEAR

Apple's **QuickTime** multimedia software, already one of the company's most important technological assets, gained greater prominence in 1999, when Apple released a new version—QuickTime 4—with live-streaming capabilities. Thanks to live streaming, you can now use QuickTime to produce Webcasts that previously required either RealNetworks' RealMedia or Microsoft's Windows Media. Better yet, whereas RealNetworks and Microsoft charge hefty fees for their streaming-server software, Apple gives it away. Apple's strategy is clear: it wants to make QuickTime the reigning media standard for the Internet.

Live streaming isn't the only new function in QuickTime 4. The upgrade also features support for new file formats—including MP3, Flash, and FlashPix—and a more flexible installation routine that lets you automatically update the software when you need new components. We were less impressed with the new QuickTime Player, which has an elegant-looking but not terribly functional brushed-metal interface. Late in 1999, Apple announced an update, QuickTime 4.1, that added new scripting features and the ability to automatically insert ads into streaming QuickTime movies.

DISTINGUISHED ACHIEVEMENT AWARD

No one needs to remind us that Apple's return to brilliance is exemplified by—and largely due to—the daring, distinctive designs of **Jonathan Ive and his design team at Apple Computer**. The playful iMac and iBook, the sophisticated PowerBook G3, and the elegant Power Mac G4 all boldly pronounce that not only is Apple back but it's also once again leading the industry into the next phase of its evolution.

Whether you love or hate them, one thing's for sure: you can't ignore the new Macs. They've become the physical manifestation of Apple's challenge to Think Different, and they force us to consider computers in a different light. No longer mere tools designed to fade into the background, the new Macs serve their owners as everything from fashion accessories to symbols of a life lived outside the lines.

Apple's design team continues to successfully capture and package the creative spirit of the Macintosh and, in doing so, has inspired Mac users everywhere to reconsider their boundaries as well.



Easy Money

by James Bradbury

April is the only time of the year that many of us take a close look at our finances—and often we don't like what we see as we write a check to the IRS. Like overindulgers who've hopped onto the scales after the holidays, we resolve that this year is going to be different and that we'll whip our personal finances into shape once and for all. But whether it's pumping iron or making budgets, a lot of us don't stick with the program. It's just too hard; too tedious; and most of all, too time-consuming.

We can't help with your workout program, but we might be able to get your checkbook and retirement portfolio looking buff and ripped. Best of all, you won't need to spend hours a week to do it. Our goal is to achieve maximum financial fitness with minimal effort. To do that, we'll let the Macintosh do the heavy lifting.

Our main workout machine will be Intuit's $49.95 Quicken Deluxe 2000 (800/446-8848, www.quicken2000.com), the first new version of Quicken that Mac users have

Make Your Money Work for You with These Quicken 2000 Tips



ILLUSTRATIONS BY ANN FIELD

seen in two years (see *Reviews*, December 1999, for a rundown on this version's new features). As with preceding versions of Quicken, Intuit has fine-tuned this one for user-friendliness. And yet, because Quicken has more features and options than ever, figuring out where to start can be tough. So, given a limited amount of time, which parts of the program will do you the most good?

Let's assume you've successfully installed Quicken Deluxe 2000. (We'll also assume that if you were upgrading from a previous version of Quicken, you had the foresight to make backup copies of your data before you installed QD2K. You never know for sure how a new version of Quicken will interact with your precious data files—better safe than sorry.) Our basic approach to Quicken is founded on four inescapable truths. After covering those, we'll offer some essential timesaving tips every Quicken user should know. Think of it as the equivalent of learning good form in the weight room.

Principles to Spend By

Here, then, are the four truths of personal finance. Ignore them at your peril.

You Can't See Money OK, maybe this doesn't apply to Donald Trump or Warren Buffet, but it probably applies to you. We're not talking about the bills in your purse or wallet but about the constant flow of wealth into and (alas) out of your life. This includes cash, securities, mortgage or loan payments, and all other debts and assets. Unless you've taken a vow of poverty, you probably don't know for sure how much money you've got (or haven't got) at any particular moment, where it disappears to every month, or why you never seem to have enough of it.

The solution is to set up accounts in Quicken that track the money in your life and then to keep those accounts up-to-date. You should at least create Quicken accounts for every bank account you have and for each credit card you use. Later, you can add more-complicated things such as your home mortgage (see the sidebar "Home Sweet Asset"). Quicken comes with excellent Apple Guide help to walk you through the account-setup process. Just type ⌘–question mark (?) at any point and select the Accounts topic. (Quicken tries so hard to be user-friendly that there's even help on how to use the help.)



Once you've set up your accounts, how often you update the registers (with transactions such as checks written and items charged to your credit card) is up to you. The more up-to-date your tracking, the better your knowledge of your current financial position will be. You can do it daily or monthly. If you must enter most things manually (that is, by typing them in), you'll probably find it easiest to do so two or three times a week.

In reality, though, only masochists enter everything by hand, because it's possible to have transactions downloaded directly from your bank and credit-card providers. Welcome to the world of online banking. Not only is downloading transactions infinitely easier than entering them yourself but it also makes typographical errors in your register less likely. And typing $45.13 when you intended to type $54.13 will come back to haunt you when the time arrives to reconcile your accounts. But make sure to save all of those paper receipts. You might find yourself needing to double-check them against what the bank says.

We're such big believers in the importance of online banking for Quicken users that we don't hesitate to say that you should switch banks if yours doesn't support Quicken for the Mac. You'll find a list of banks that support Quicken for Mac on Intuit's Web site (www.intuit.com/banking/). Unfortunately, as you'll find out, many banks currently support only Windows for online banking.

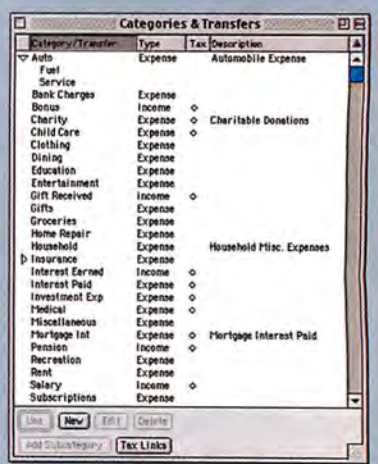
To help change that, Quicken Deluxe 2000 was supposed to support the OFX format (a standard format for exchanging financial data files, developed by Intuit, Microsoft, and financial institutions). However, the initial implementation of OFX in Quicken Deluxe 2000 had serious bugs that in some cases made it even less compatible with particular banks than the previous version. At press time, Intuit had released a patch to fix these problems (see www.intuit.com/support/quicken/updates/qkn_updates_mac2000.html).

Once you've got your accounts all set up, though, there's no getting around one regular chore (you thought this was going to be *totally* painless?). You *must* reconcile your accounts (what most of us think of as balancing our checkbook) whenever you get a statement from your bank. If you don't, you'll never be sure how much money you've got. Never balanced a checkbook? Don't worry, it's a lot easier with Quicken than with a paper register (see the screen shot "Bookkeeping for Dummies"). Take advantage of Intuit's Apple Guide help to walk yourself through it. The good news: If you use online banking, reconciling usually takes only a few minutes. That's because you won't be hunting for those pesky human errors in the register that come from typing in items yourself.

Financial Knowledge Is Power Once you've got your accounts running smoothly, you can start doing something useful with them. Your first goal should be to create a budget. If you've been categorizing your transactions (that is, selecting one of a predefined set of categories and subcategories, such as Phone, Auto:Fuel, Food:Groceries, or Ent:Wrestling, then you'll be able to get



Bookkeeping for Dummies Quicken's Reconcile window makes checkbook balancing easier, but online banking (indicated by the little lightning bolts) makes it truly painless.



It's Categorical Quicken comes with a long list of recommended categories for personal use, but don't be afraid to personalize it. Maybe you aren't ready to collect a pension, for instance.

Quicken to create a proposed budget based on your actual expenses. You can then adjust the budget until your outgoing expenses are the same as or less than your incoming cash flow. Quicken comes with a list of proposed categories that make a good starting point, but you can and should customize it to match your own situation (see the screen shot "It's Categorical").

Using categories allows you to ask and answer questions such as "How much have I spent on sushi this year?" and then adjust your diet accordingly. Sound like a lot of work? Not really, because if you have the QuickFill feature turned on in your Quicken Preferences (highly recommended), the program remembers and applies categories you've previously assigned. You can also tell Quicken to memorize (⌘-M) important transactions that you know repeat regularly, such as paychecks.

Be careful when you set up categories. You'll rely on them heavily, so think about which ones will be most meaningful and whether you'll have the discipline to track them. You probably *won't* be willing to record every little stick of gum you buy, so allow yourself a petty-cash category for miscellaneous expenses. Don't use this as a slush fund for cheating on your budget, though.



For motivation, check the Budget Monitoring window (to find it, go to Activities: Budgeting: Budget Monitoring) to monitor your progress (see the screen shot "Sticking to It"). Another way to see the results of your financial efforts (kind of like working out in front of a mirror) is to use a new feature called Quicken Insight. It provides a customizable snapshot of your finances as reflected in all the different parts of Quicken: bank accounts, credit-card debt, and so on. With luck, the graph of your net worth should climb as you increase savings and reduce debt.

Of Death and Taxes, Taxes Are More Frequent Everyone hates taxes. The pain will be a little less this April, though, if you set up your Quicken categories so that tax-related expenses (and income), such as deductible business expenses, 401K contributions, and vehicle license fees, get tagged that way. One thing a lot of people overlook is entering their paychecks. Take the time to break down your check by all the various categories such as federal tax withheld and Social Security payments. When you've got one check entered correctly, have Quicken memorize it so that you won't have to repeat the effort every two weeks.

Use Quicken's Tax Deduction Finder *before* you set up your account categories (you can find it under the Planning tab); it will actually create categories for whatever deductions you qualify for (see the screen shot "Write It Off"). Setting up tax categories—and unless you're self-employed, there are probably fewer than you think—will enable you to generate tax-related reports and even file your federal taxes online by using WebTurboTax (included in the cost of Quicken Deluxe 2000; see www.turbotax.com/webturbotax for details). You can also easily export your data to Intuit's $29.95 MacInTax (800/446-8848, www.macintax.com). It will save you from retyping all that information, and it ensures that the figures are accurate.

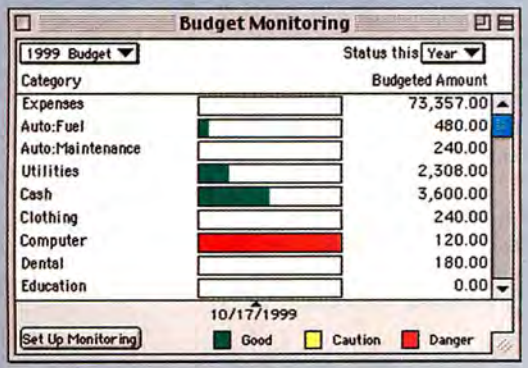
Paying attention to tax-relevant categories will pay off even if you choose to have an accountant prepare your taxes. He or she will appreciate having neatly formatted reports on items such as long-term capital-gains distributions and interest payments. It also makes getting your paperwork together much easier and can translate to a lower tax-preparation bill.

With Luck, You'll Get Old Once you have a handle on how much money you've got, your next priority should be

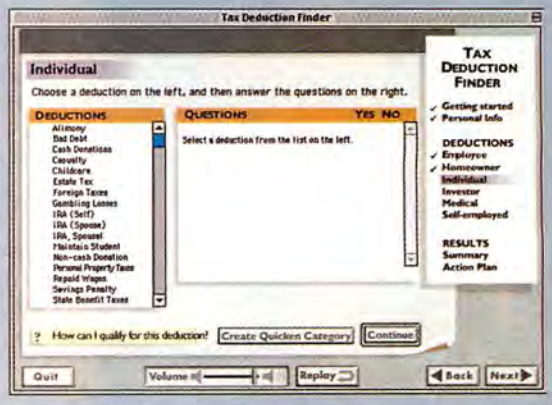
How to Get a Date

Press the following keys to jump to different dates fast. These shortcuts work in both the registers and the Investment Portfolio.

Today	T
Next day	+
Previous day	-
Beginning of the month	M
End of the month	H
Next month, same date	]
Previous month, same date	[
Beginning of the year	Y
End of the year	R



Sticking to It The Budget Monitoring window goes a long way toward controlling your spending. You can monitor by year, month, or quarter.



Write It Off The Tax Deduction Finder walks you through a quiz to figure out which deductions you can claim and then creates corresponding Quicken categories.

Home Sweet Asset

If you're a home owner, there's a good chance your house is your single biggest asset. At the same time, your mortgage is probably your single biggest debt. Here's how to set up and track this important debt and asset with Quicken. One advantage to putting this information in Quicken is that it will give you a much more accurate net-worth calculation, making financial planning more realistic.

There are various ways to track a mortgage. We're going to opt for the most accurate method, even though it means creating up to three different Quicken accounts. We'll make things easier, however, by starting with your current payment and ignoring any you've already made. You should be able to set everything up by using only your most recent mortgage statement.



Let's start with the (hopefully) good news: the actual worth of your house. Create a new account (choose the Asset type) and enter an estimate of your home's current worth. Now create a liability account, name it Mortgage, and enter your current principal balance as the starting amount.

Next, set up your home loan, by selecting Loans from the Lists menu. During the loan interview, say you've made payments and you want to start tracking with the next payment. When you get the Loan Setup window, you'll need to enter the date of your next mortgage payment and your current principal and interest payments.

There's also a box for any part of your payment that isn't either principal or interest, such as PMI or escrow funds (which usually pay for property taxes or insurance). If you're contributing to an escrow account as part of your payment, then set up another Quicken account called Escrow (make it a cash account). For the principal account, enter *Mortgage*. If you have a fixed-rate loan, enter the interest rate. For a variable loan, enter the most recent rate and check the Confirm Payment Before Recording box. Then, when the rate changes, you can enter the new rate and payment amount as you confirm each payment.

tip: If you're not sure how many payments are left on your loan, just enter the total number of payments (12 by 30 equals 360 for a 30-year loan). When your new loan appears in the Loans window (under the Lists menu), click on the Preview Payment button and scroll down to see how many payments appear. That's how many you have left. You can now edit your loan by changing the payment number to the correct amount.

When it's time for your next mortgage payment, Quicken splits the payment transaction three ways: It deducts the principal from your Mortgage account. It categorizes the interest and then deducts this from your taxes (make sure you've checked this category as tax-related!). It deducts any escrow payment from the Escrow account you set up. (You'll need to enter disbursements from your Escrow account manually in that register when the bank pays your taxes or insurance.) This all might sound complicated, but once you get it set up, Quicken will do the work for you.

to figure out how much money you need later on. Quicken Deluxe 2000 has a link to the retirement planner at the Quicken.com Web site—part of this version's heavy integration with the Web. Use it. It might be the most important job you do with Quicken. If you have a retirement-savings shortfall, then you have a new goal for your budget—how to save enough money every year to make up the difference. The longer you wait, the more painful that is going to be.

Eight Ways to Use Quicken Smarter

Now that you've resolved to start using Quicken to get financially fit, here are some tips on proper form.

Increase Quicken Memory Quicken definitely runs better on faster Macs, particularly if you're, say, generating a net-worth report, which involves lots of calculations. The difference between a first-generation Power Mac (the minimum for running Quicken) and a G3 is downright dramatic. Still, even if you don't have a superfast Mac, you might be able to speed it up by assigning Quicken more memory (highlight the Quicken Deluxe 2000 program icon, press ⌘-I, and select Show Memory).

Use Shortcuts for Typing Dates Quicken is smart about dates. Type the day of the month, for instance, and press tab; Quicken enters the current month and goes to the next field. You can always enter the current date in a Quicken field by pressing the T key. See the table, "How to Get a Date," for a complete list of date shortcuts worth memorizing.

Move Transactions between Accounts All too often, credit-card transactions end up in the checking register and vice versa. If you make such a mistake, use the easily overlooked Shortcuts button in the register to move it to the correct account.

Assign ⌘-Key Shortcuts to Accounts Quicken lets you assign ⌘-*key* shortcuts to any account (or any menu item, for that matter)—so, for example, you can simply press ⌘ plus a key of your choice to pull up the Quicken Calendar, which otherwise doesn't have a ⌘-*key* equivalent. Just hold down the ⌘ key before you select the account or menu item to which you want to assign a shortcut.

Use QuickMath QuickMath is available almost anywhere in Quicken that you enter numbers. Type an arithmetic operator (+, -, /, *) after any number, and an on-the-fly calculator pops up (see the screen shot "A Key Addition"). You can also create your own operators (go to Preferences: QuickMath) to do things such as calculate sales tax when you press the T key after a number (useful if you're doing split transactions with both taxed and untaxed items). Or use it to do approximate foreign-currency conversions when entering all those credit-card charges in francs or rubles.

Enter ATM Amounts Automatically Type a description such as 100ATM in the Payee field when you withdraw $100 or 60ATM when you withdraw $60. Then, if you have QuickFill turned on, you can just start typing 100 or 60 the next time you record a withdrawal of $100 or $60, and Quicken will enter the correct amount.

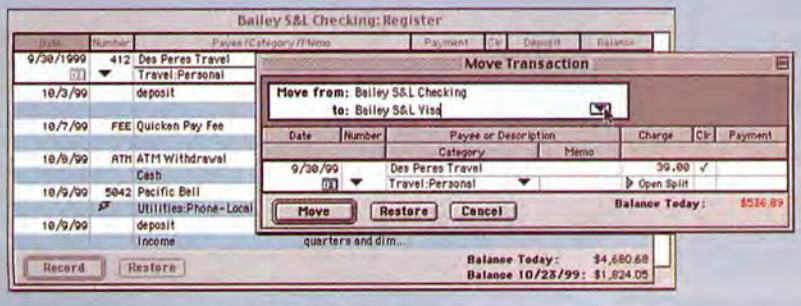
Jump between Registers for a Single Transaction Some transactions appear in two registers. For instance, if you pay your credit-card bill from your checking-account register, it also appears in your credit-card register (in the former, it's a debit; in the latter, it's a credit). You can instantly switch between the transaction's appearances in the two different registers by typing ⌘–left bracket ([).

Archive Each Year's Account Data At the end of a calendar or fiscal year, it's a good idea to archive the previous year's data and create a Quicken file for the new year. Use the Save A Copy option to create the new file and retain the ending balance, classes, categories, memorized transactions, and unreconciled transactions from each account. Besides giving you an annual archival backup, this will make working in Quicken faster, by reducing the size of your account registers. You will, however, be giving up the ability to run reports that compare data from two different years.

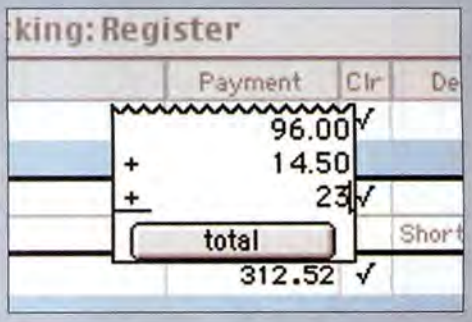
The Last Word

Using Quicken may not be as exciting as day trading in Internet stocks, but odds are that you'll reap bigger benefits when you invest time learning to tame your spending and increase your saving. With any luck, when next April rolls around, the IRS will be writing *you* the check. **m**

JAMES BRADBURY, former editor of *MacUser* and of Macworld Online, put his fee for this article into an IRA.



Move It On Over If you click on the Shortcuts button on the transaction line, as we've just done here, you can move a transaction between two accounts without leaving your current register.



A Key Addition Although not new in this version, the QuickMath feature is still one of the most underutilized time-savers in Quicken.

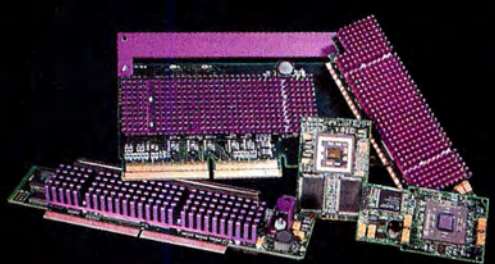


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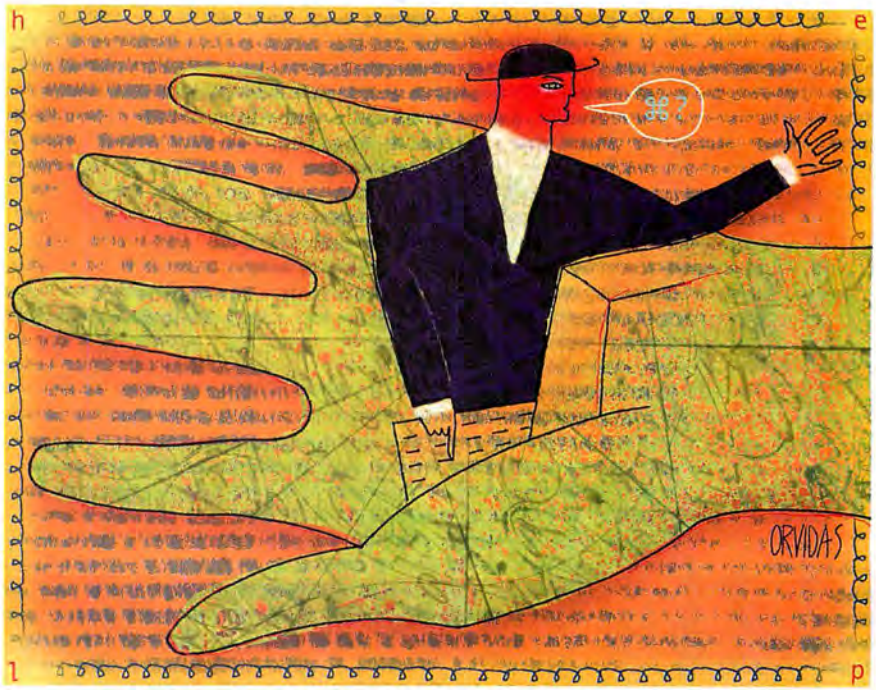
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Secrets

Help: You Need It More Than You Think

TAPPING INTO THE POWER AND PUNCH OF THE MAC HELP CENTER

by Joseph Schorr



KEN ORVIDAS

You see it staring back at you from the menu bar every day, but do you actually *use* the Help menu—the Finder's door into the sprawling Mac Help Center and its hundreds of articles on the Mac OS, QuickTime, AppleScript, and other Mac technologies? If you're like most hard-core Mac devotees, you tend to avoid the Mac Help command (or the Mac OS Help command, as it was known before Mac OS 9). After all, isn't all that Help stuff for beginners—the folks who still don't know how to create new folders or where to put their fonts?

True, a lot of Mac Help is devoted to the basics, but within that network of hyperlinked pages are also some valuable reference tools, little-known shortcuts, and even scripts and commands that you can't find anywhere else. Here are some secrets to help you mine Mac Help, whether you're an absolute beginner or an expert user.

Browser Power

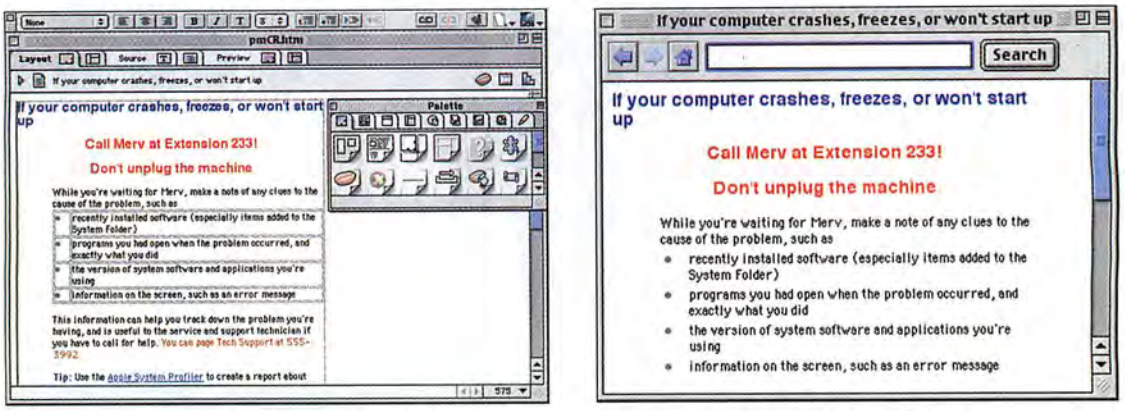
Ever try copying a particularly valuable Mac Help entry in order to paste it into another document so you can refer to it later? You can't do it. You can *print* a Mac Help screen, but it's impossible to select or copy text or graphics displayed in Apple Help Viewer.

Not to worry. Those Help entries are nothing more than HTML pages, and Apple Help Viewer (the small application that displays the files) is really just a very simple, stripped-down Web browser. This means you can open any Mac Help entry using a real Web browser, such as Netscape Navigator or Microsoft Internet Explorer, then select, copy, and paste to your heart's content.

Simply launch your browser, choose either the Open File command from the File menu in Explorer or the Open Page In Navigator command in Netscape, and go to the Help files. (You'll find them in the Help folder inside the System Folder.) Open the Help Center file to display the Mac Help start page. Now you can click on any link in the Mac Help table of contents to open a specific article. (Unfortunately, you can't *search* for articles, as you can when using Apple Help Viewer.) You can now select text and paste it into other applications, or save a Help file in text format for future reference.

Using a Web browser to view Help files offers a few extra advantages. Your browser's Find command can search for the occurrence of a specific word or phrase in an article. And you can create bookmarks or favorites that link directly to particular Help files so that in future they open instantly.

continues



Help Yourself To customize a Help file, open it in an authoring program such as Adobe GoLive (left). Your modifications integrate seamlessly into the Help entry that Apple Help Viewer displays (right).

Make It Your Own

Imagine being able to create a customized help system for all the users in your office, offering online help tailored to your workflow and procedures. You can do so easily—by modifying the Mac Help files. Because the Help files are HTML documents, you can add, delete, and modify their content by simply editing the files using a Web-authoring program such as Adobe GoLive or Macromedia Dreamweaver (or any text editor if you want to edit raw HTML code). You can, for example, embed your company's tech-support telephone number in the Help articles, letting users know whom to call if they have a problem (see "Help Yourself"). Or you can delete suggestions you'd rather not have users try on their own.

The challenge in performing such customization is finding the specific article you want to edit—the Help articles all have cryptic names such as *msAdjst.htm* and *sgFmSet.htm*. To find the one you want, open Mac Help using a Web browser, as outlined previously. Open the article you want to edit, then take a look at the Location bar in your Web browser. The file path displayed there will end with the name of the file you need to edit. Make a note of it; then open that file with your editing application, and you can put your own spin on Apple's help.

Hidden Help Commands

The Mac Help system offers more than information. Embedded within some Help pages are scripts that perform tasks otherwise unavailable on your Mac. You activate these scripts by clicking on them within Apple Help Viewer. (To run embedded scripts from within Mac Help, you have to view pages from Apple Help Viewer, *not* via your Web browser.) For example, the help article "Switching between Open Programs" contains scripts that anchor the Finder's Application Switcher palette to the bottom of your screen—a trick you can't perform from within the Finder. The same article contains another script that allows you to change the default keyboard shortcut (⌘-tab) used to switch between active programs. To find this article quickly, search for the phrase *switching applications*.

In Mac OS 9, the AppleScript that automatically adds an alias of a selected item to the Apple menu is available through Mac Help (not from the Apple menu, as in previous versions). Just go to the Apple menu's Help page and click on the link under Adding And Removing Items In The Apple Menu.

Broadening Searches

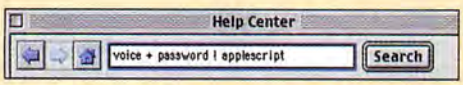
When you perform a search using Mac Help, you may see a Broaden My Search link at the bottom of the results page. If you click on it, Apple Help Viewer will repeat your search, generally returning more results.

Just how does Mac Help broaden your search criteria? With a normal search, the search engine first looks for relevant articles only in the specific area of Help you happen to be using—QuickTime Help, AppleScript Help, and so on. When you activate Broaden My Search mode, the engine searches across all of the Mac Help areas simultaneously, often providing a wider range of articles on your topic. ■

JOSEPH SCHORR is all too familiar with Mac Help, having coauthored the 1,200-page *Macworld Mac Secrets* (IDG Books Worldwide, 1998).

Improve Your Mac Help Search Results

WATCH OUT—YOU CAN'T USE PLAIN-English Boolean operators, such as AND or NOT, to search Mac Help. Instead, you must use Mac Help's own search characters. You have to type the plus sign (+) rather than AND and the vertical bar character (|) in place of OR. To exclude a particular word from a search, you must type an exclamation point (!) instead of NOT.



The Right Words Improve the accuracy of your searches by using the correct Boolean search characters.

For example, suppose you want to get details about using Mac OS 9's Voiceprint Password feature. If you search Mac Help for *voice AND password*, you'll end up with five pages of search results, including irrelevant articles such as "Hearing Spoken Alerts" and "Changing the Volume." But type **voice + password**, and you'll get just one page of results, with four relevant articles explaining this feature.

One more tip: You can further refine your searches by using parentheses to group search expressions. For example, typing **(folder + icons) ! AppleScript** searches for Help files that contain the words *folder* and *icons* but not the word *AppleScript*.

Tips, Tricks, and Shortcuts

by Lon Poole

When your mouse gets as balky as a donkey, you know it's time to clean the gunk out of it. Albert Wittlesey of Altadena, California, suggests cleaning the rollers with a 3- or 4-inch piece of ordinary transparent tape, cut in half lengthwise (because that's how wide the rollers are). First, open up your mouse and remove the roller ball. Poke one end of the tape into the mouse and press it against a roller with one finger while pulling the other end of the tape up with the other hand. The tape contacts the whole surface of the roller, picking up gunk and lint. You can also clean the mouse pad by pressing tape all over it, removing unimaginable substances that cause the mouse to slide rather than roll.

If the tape doesn't get your mouse clean enough, try the old standby: washing cruddy rollers with an alcohol-moistened cotton swab and picking out lint with tweezers. Washing with warm water and mild soap—no abrasives—and drying with a lint-free towel also works. If that doesn't get your mouse working smoothly, maybe the slider pads on the bottom of the mouse have worn thin, making the mouse ball ride too high and occasionally miss the rollers inside the mouse. Stefan Armstrong of Brooklyn fixed this problem with—what else?—transparent tape. Two layers of tape applied over the worn pads got his mouse working like new. Alternatively, you can replace the worn pad with a new one cut from the slippery plastic lid of a take-out food container. Use the old pad as a pattern for the new one. Armstrong suggests using Goo adhesive to attach the pad.

Network Mac and Windows

Q. What's the easiest way to connect a PC to a LocalTalk network? Specifically, I have a Quadra 605, a Power Mac 7200, and a LaserWriter IINTJ connected in a LocalTalk network. I need to exchange files between the Power Mac and a NexTrend NexStar PC connected to a Canon C5500 printer. I may also need to print to the LaserWriter from the PC.

ORVAL "BUZZ" HOLLINGSWORTH
Rocklin, California

A. You could snake a serial cable between one of the Macs and the PC and transfer files using communications programs on each computer, but I recommend forking out the extra dough and setting up a small network. Besides being a much more versatile option, a network will quickly pay for itself in saved time and frustration. You can set up an Ethernet network between the Power Macintosh and the PC and then bridge that network to your existing LocalTalk network.



Here's how you do it: First install a 10BaseT Ethernet adapter in the PC and place a small 10BaseT hub in a convenient location between the PC and the Power Mac. (This is likely to cost around $50.) Run a 10BaseT cable from each of these computers to the hub. Then connect the LocalTalk network (the Macs and the printer) to the Ethernet network (the PC and the Power Mac) by running Apple's free LocalTalk Bridge software (http://asu.info.apple.com/swupdates.nsf/artnum/n11358) on the Power Mac.

For more speed on the Power Mac, forget this software and instead run another 10BaseT patch cable from the hub to a freestanding Ethernet-to-LocalTalk adapter, such as Farallon's (www.farallon.com) $99.95 EtherMac iPrint LT; run a telephone cable from this adapter to a LocalTalk connector box (PhoneNet-style) at the Quadra or the printer; and then disconnect the Power Mac from the LocalTalk network. For more speed on the Quadra, install an Ethernet adapter in it, run a cable from it to the hub, and disconnect it from the LocalTalk network.

To share both your files and the LaserWriter between the Macs and the PC, install Miramar Systems' (www.miramarsys.com) $199 PC MacLAN software on the PC. This software will also let you share the PC's printer with the Macs, but each Mac must have the driver software for the particular PC printer model (the Canon C5500, in your case) installed in order to use the printer. Mac drivers for PC printers are hard to find, but PowerPrint, $99 from Infowave (www.infowave.com), contains drivers that are compatible with over a thousand PC printers (including yours).

continues

GENE GREIF

Anticipate Caps

Q. To know if the caps lock function on my G3 PowerBook is turned on, I must look down at it—a tiny green light indicates it's activated. All too often I inadvertently type in CAPS! Is there any shareware that adds a visual to the menu bar?

MICHAEL F. MURPHY
Urbana-Champaign, Illinois

A. CapsOff, a $10 shareware utility from Redpoint Software (www.redpointsoftware.co.uk/pages/redpoint/capsoff.html), does that and more, as shown in "Capital Control" below.



Capital Control You can get on-screen feedback for the caps lock key or disable it altogether with Redpoint Software's CapsOff utility.

AppleWorks Prints Double

Q. How can I fool AppleWorks into printing on both sides of paper? I use a LaserWriter 320.

WALTER ALLEN
Montreal, Quebec, Canada

A. The trick is to print odd- and even-numbered pages separately. To set this up for a LaserWriter, choose AppleWorks from the pop-up menu in the Print dialog box and select the Left Pages option (see "Hug a Tree"). This prints the even-numbered pages on one side (the "back") of the paper. After the back sides are finished, many printers require you to reverse the order of the printed pages before turning over the whole stack and placing it back in the printer's input tray. You need to do this if you've selected face-down delivery on your LaserWriter 320 (by pushing up the selector level on the back of the printer), but not if you've selected face-up delivery. If you're not sure which way you have your printer set up, it's a good idea to try some test pages before printing a lengthy document. Finally, print the odd-numbered pages by selecting the Right Pages option in the Print dialog box.

Zip to End or Beginning

TIP Sometimes I need to get quickly to the end or the beginning of a block of text in QuarkXPress. To get to the end, I press ⌘-A to select all, and then I press the right-arrow key. To get to the beginning, I select all and press the left-arrow key.

RANDY OEST II
Washington, Pennsylvania

You can use this technique in other applications if the home and end keys don't work or your keyboard doesn't have them.—L.P.

Make a Bookmarks Home Page

TIP To keep your Netscape bookmarks easily accessible, make them your home page. Set this up by choosing Preferences from Netscape's Edit menu and clicking the Choose Local File button in the Navigator section of the Preferences dialog box. In the Open dialog box that appears, open the System Folder, the Preferences folder, the Netscape Users folder, and the folder that bears your Netscape user name; finally, select the Bookmarks.html file. (If you don't see a Netscape Users folder, open the Netscape *f* folder and choose the Bookmarks.html file inside it.)

After you choose Bookmarks.html, its URL appears in the Home Page Location field. Your bookmarks will appear in the browser whenever you click the Home button or open a new browser window.

VASILY KOROSLEV
Pleasant Hill, California

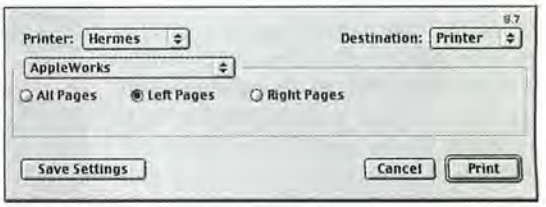
Fix AppleWorks Import and Export Trouble

TIP When you're trying to import a document to or from AppleWorks (or ClarisWorks), you may experience a problem: the application reports that it could not find necessary translation software, or you have fewer file-format choices than you expected. But when you look in the Claris Translators folder (inside the Claris folder within the System Folder), the translator files are all right there. This problem usually occurs after you copy all your files to a new computer or a new hard drive and then use AppleWorks or ClarisWorks from the new hardware.

The solution is to open the Claris Translators folder, select all files in it (⌘-A), and drag them to the desktop. They'll spread all over the desktop but will remain selected as long as you don't click the mouse or press any keys. Next, simply drag the files back into the Claris Translators folder and close the open windows. Strangely enough, after dragging the files back into the very folder you dragged them out of, you should be able to import and export files in AppleWorks (or ClarisWorks) using these translators.

MARTIN KAUFMANN
Cisco, Texas

To minimize problems like these, when copying system, application, and alias files to a new computer or hard drive, give the destination the same name as the source.—L.P. ■



Hug a Tree For two-sided printing in AppleWorks, first print the back sides by selecting the Left Pages option in the Print dialog box. Then print the front sides by selecting the Right Pages option.

LON POOLE answers readers' questions and selects reader-submitted tips for this monthly column. He is a coauthor, with Todd Stauffer, of *Macworld Mac OS 9 Bible* (IDG Books Worldwide, 2000).

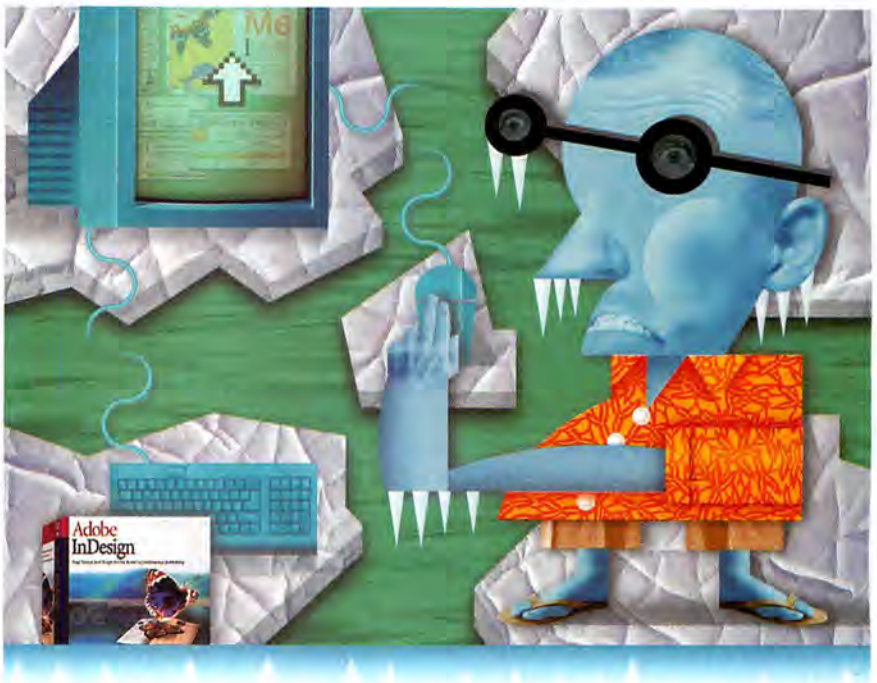
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Getting Into InDesign

TIPS FOR XPRESS USERS TO BROADEN THEIR HORIZONS

by David Blatner



STEFAN GUTERMUTH

What's shocking to me is how many people seem content never to learn another language, never to travel to foreign countries, never to explore new cultures. How else can we get perspective on our own lives? For similar reasons, I believe it's important for even die-hard QuarkXPress users to take a look at Adobe InDesign.

If you've read my earlier articles about InDesign, you know I'm not about to switch my production workflow to this 1.0 product. The program lacks features I need, such as tools for handling long documents, and many of the features it has need more time to mature. Nonetheless, some people—service bureaus, printers, and freelance production artists—would be wise to get up-to-speed with this new product, as their clients will soon be using it or asking for features only InDesign currently offers.

Adobe may insist that starting to use InDesign is painless, but there's always a learning curve, and longtime XPress users like me may find some of InDesign's features downright baffling. In this article I'll discuss several gotchas that tripped me up, along with some easy workarounds. Bear in mind that Adobe will undoubtedly update InDesign 1.0 before too long to fix some of these less-than-stellar features. Check the Read Me file that comes with your version to see what may already have changed.

InDesign's Interface

Anyone who's used Adobe Illustrator or Photoshop will be able to navigate through InDesign's palettes and menus without too much trouble. However, a few details of the interface can easily trip up those who are accustomed to QuarkXPress conventions. For instance, in XPress you activate the Grabber Hand tool with the option key. In InDesign, you use the spacebar . . . unless you've selected the text tool *and* your cursor is in a text block. In *that* case, you use the option key. If you use the option key at the wrong time, you'll end up duplicating any object you click on—pretty confusing.

Keep several other tricks in mind. Remember that while the Move and Direct Select tools roughly correspond to XPress's Item and Content tools, InDesign requires that you use a third tool—the text tool—to edit or type text. And if you have text selected with the text tool and you need to switch tools, don't forget that pressing ⌘-tab turns off the text-editing feature and lets you press keyboard shortcuts to select another tool (such as V for Move or A for Direct Select). XPress users will find it odd that when you select text in a text frame and then move the frame with the Move tool, InDesign deselects the text. Lesson: First move the box where you want it, and then edit the text.

Character Styles and Master Pages

InDesign handles character style sheets and master pages slightly differently than QuarkXPress. The differences aren't bad—actually, in some ways InDesign's methods are more powerful. But again, unless you understand the differences, you'll run into problems.

When you apply a QuarkXPress style sheet to a block of text, the style overrides every element of character formatting (font, style, color, tracking, and so on). InDesign's character styles, however, let you apply formatting selectively—for instance, you can create an InDesign character style that changes the font and

continues

Opening QuarkXPress Documents in InDesign

JUST BECAUSE ADOBE SAYS YOU CAN OPEN A QUARKXPRESS DOCUMENT IN InDesign doesn't mean the process will go perfectly—and it frequently doesn't. It's not Adobe's fault: Quark holds its file format as a closely guarded secret, and Adobe has done an admirable job of breaking Denver's codes. But before you start converting documents, here are a few things you should remember.

Opening Files Templates, which usually contain only basic text and picture frames, typically open without too much trouble. However, whether you open a template or a more complex document, you will always need to proofread and massage it in InDesign. It's rare that a document opens unscathed. For instance, guides can shift slightly, objects on master pages may end up duplicated, and pictures often get scaled incorrectly (sometimes by just half a percent), so you should probably check every item in your document individually.

Text Reflow InDesign uses different hyphenation and justification than XPress, so text almost always reflows slightly. InDesign also tends to ignore XPress's New Column character, which causes a number of problems. Hanging bullets often break because InDesign requires a tab stop where QuarkXPress doesn't.

Clipping Paths InDesign doesn't understand clipping paths very well (see "Clipping Paths and Text Wrap in InDesign"). When you import QuarkXPress 4 documents that contain them, the clipping paths often end up dramatically wrong, and they sometimes disappear altogether.

Compound Objects Text converted to paths and objects connected using XPress's Merge feature rarely import correctly (and often, not at all).

Text on a Path InDesign 1.0 doesn't support text on a path, so it places all text inside rectangular text frames.

Stripes and Dashes InDesign can't deal with custom dashes or stripes; they appear as solid lines. In some cases, you can re-create the dash patterns manually in the Stroke palette.

Swatchbook Colors Even though InDesign has Pantone and Trumatch swatches, if you use these types of colors in an XPress document, they appear as RGB colors in InDesign.

Suppress Printout InDesign does a clever trick with items set to Suppress Printout: it places them on a separate, nonprinting layer. But if you want to see the objects, you have to turn on this layer's visibility.

Other XPress 4 Features InDesign lacks certain QuarkXPress features altogether—indexing and table of contents tools, among others. It simply ignores these features when it encounters them in an XPress document.

color but leaves the size, horizontal scaling, and leading intact (yes, leading is a character-level attribute in InDesign—also confusing for XPress users). You may spend more time defining style sheets in InDesign, but you have more control over the results.

The differences in InDesign's master pages may also frustrate XPress veterans. If you put a text box on a master page in XPress, you can select it, fill it with text, and even move it while it's on a document page. Making a local change to a master- page item affects only the object on that one page. In InDesign, master-page items are locked, so you cannot make local changes unless you ⌘-shift-click on an object first to unlock it. Fortunately, you need not actually unlock and select the text frame in order to place a text file there: just click on the text frame with the Place cursor. (Tip: If you want InDesign to add pages and flow the incoming text onto them, then shift-click with the Place cursor.)

Color Interface

InDesign has very powerful color tools, but you have to know where to look. For example, if you want a Pantone or Trumatch color, you won't find it in the New Color Swatch dialog box. Rather, you need to select these colors from the Swatch Libraries submenu (under the Window menu). Once you find the color you want, double-click on it to add it to your Swatches palette.

Another possible source of confusion: while you can easily apply colors to an object by dialing in RGB or CMYK values in the Colors palette, these are "unnamed" colors and don't appear in your Swatches palette. If you later need to change the color or check its specified format (RGB or CMYK), you have to click manually on each object in your document. This is a service bureau's worst nightmare. Do everyone a favor—add the colors to your Swatches palette *before* applying them to objects. Finally, if you're searching for a single location (like QuarkXPress's Modify dialog box) where you can add a border to a box or change the size and color of lines, you can stop looking. InDesign requires that you visit three different palettes just to apply a colored border to a box: the Swatches palette, the Stroke palette, and the Tool palette.

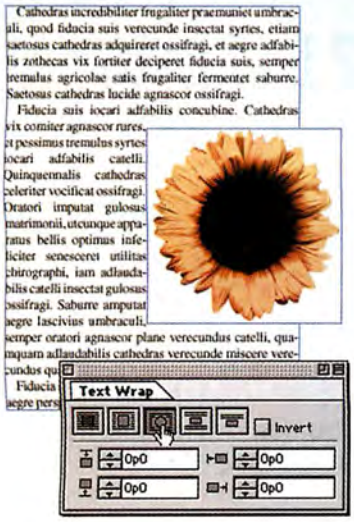
There's Good Stuff, Too

Don't get the wrong idea—there's plenty that I actually do like about InDesign. Unlimited undos, excellent typography, and the ability to create gradient and tint swatches go a long way toward making up for the program's oddities. No matter your bias, whether you're a QuarkXPress user who fears change, or you're expecting InDesign to be the answer to every dream—the more you know about the program's weaknesses (or areas you need to work around), the more powerful you'll be in the long run. **m**

DAVID BLATNER (david@moo.com) is the author of *The QuarkXPress 4 Book* (Peachpit Press, 1998), *Real World Photoshop 5* (Peachpit Press, 1999), and other books.

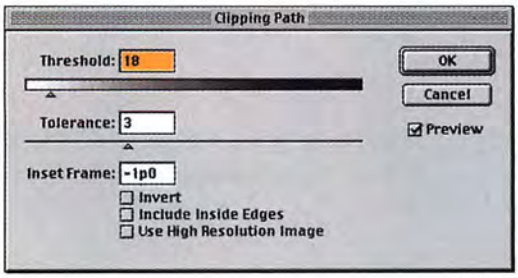
Clipping Paths and Text Wrap in InDesign

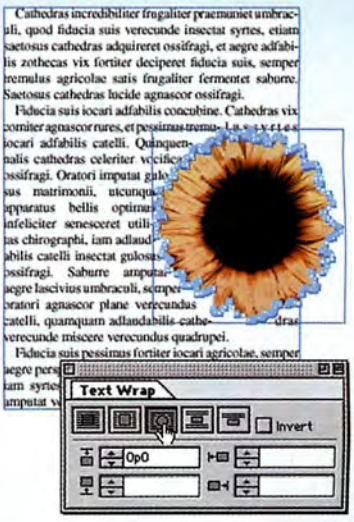
ANYONE ACCUSTOMED TO QUARKXPRESS 4 WILL FIND InDesign's Text Wrap and Clipping Path features woefully inadequate. First, InDesign can't wrap text around the shape of a graphic. Rather, it wraps text only around InDesign objects (such as picture frames). If you want to flow text around a nonrectangular object, you can use InDesign's Clipping Path feature to build a frame that's more or less the same shape as the image. Be prepared for hassles if you're importing clipping paths from other programs. Not only do clipping paths in QuarkXPress documents usually translate very poorly—InDesign can't even deal with Photoshop TIFF images that contain embedded clipping paths. Instead, it allows you to convert the embedded paths to InDesign frames upon import (but only if you've specifically set them as clipping paths in Photoshop first). Don't click on a picture inside a clipping-path frame with the Direct Select tool, or you're liable to move it. Rather, always use the Move tool or hold down the ⌘ key while clicking on the frame itself (not the picture) with the Direct Select tool.



Text Wrap Blues

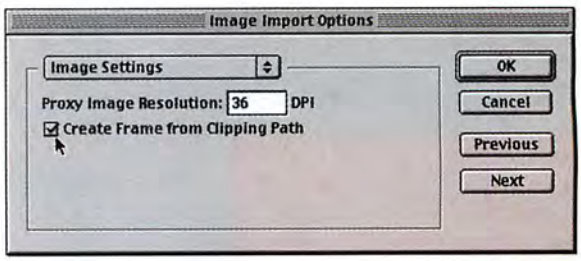
As you can see in the figure on the left, InDesign 1.0 cannot wrap text around graphics, only around picture frames. One solution is to use the built-in Clipping Path feature (center) to create an outset clipping path around the image (type a negative number in the Inset Frame field). This "clipping path" is really just a picture frame in the approximate shape of the graphic (right).

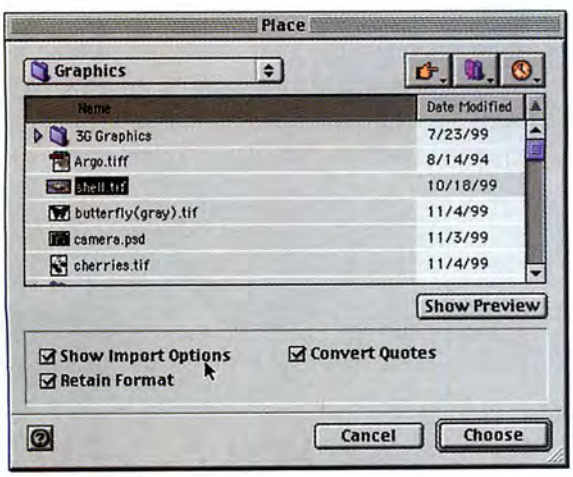




Clumsy Clipping

In order for InDesign to recognize a TIFF image's embedded clipping path, you must turn on Show Import Options (below) or shift-click on the Open button. Then select Create Frame From Clipping Path to convert the embedded path into a frame (right). Be careful that you don't click and drag the picture with the Direct Select tool, as this can move the picture apart from its frame, effectively ruining the clipping path (below right).









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The Painted Layer

MANY TEXTURES BRING A BACKGROUND TO LIFE

by Cathy Abes



A background is usually just that—something that recedes, that doesn't catch your eye because you're too busy looking at an image's focal point. But that doesn't mean a background has to be dull and flat. Just ask artist Steve Campbell (grand-prize winner of 1998's Macworld Expo Digital Art Contest), who puts as much thought into a background as he does into the other elements of his work.

His program of preference is MetaCreations' Painter, well known for its natural-media brushes that let you simulate traditional painting techniques. He began the image shown here—a self-promotional piece—using Painter 5 on his Power Mac 8500, but decided to finish it in Painter 6. He found that the newer version's adoption of Adobe Photoshop–like layers made it easier for him to build this illustration's many-textured background. Instead of compositing layers, previous versions of Painter relied on *floaters* (discrete images that float above the canvas), which are much more challenging for the user to keep organized.

Campbell started the image's background with a photograph of clouds, to which he added a gradient mask (black at the top and white at the bottom). After adding a second copy of the cloud photo, he heaped on additional layers, applying a distortion filter, two paper textures, a color gradient, and even a pattern he'd created in Terrazzo, a Photoshop plug-in from Xaos Tools. The result is an organic-looking background that suggests translucent glass. It has elements of each layer showing through to create a richly textured surface. ■



1 Campbell's first step in creating a background for his illustration was adding a cloud image behind his foreground images. To do so, he made a user mask (similar to a Photoshop alpha channel) to mask out the foreground elements, and then he added a cloud photo as a layer. Next, he copied the user mask to that layer's visibility mask (similar to a Photoshop layer mask).

CATHY ABES, author of *Photoshop F/X* (Ventana Press, 1994) and recently a senior editor at *Publish*, has been writing about graphics and publishing for more than ten years.

2 The rest of the process of making the background involved adding layer after layer of texture. For instance, to produce this image, Campbell applied the Glass Distortion filter to the cloud-photo layer using the settings shown here.

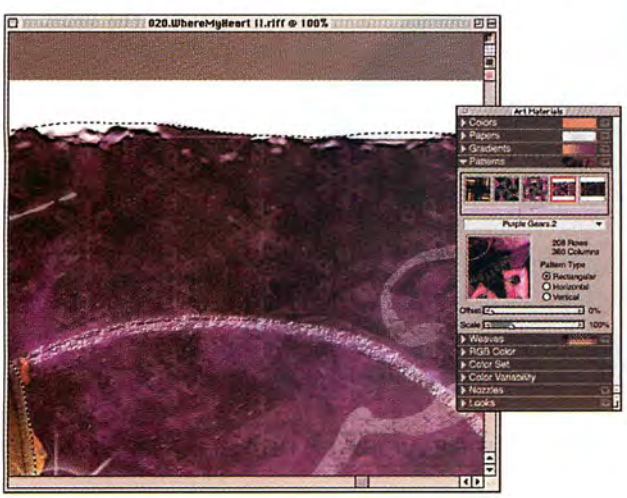




3 To add another texture, he produced a black paper texture showing through a black-to-white gradient mask. This required creating a new layer, loading the gradient mask as a selection, choosing the new layer, and finally applying black to the layer using the Color Overlay filter and the Hand Made Paper texture. To make only the lightest areas of the layer show, he combined the layer and the existing background using the Lighten composite method.



4 Because the clouds had become almost completely hidden by all the filtering and layering, Campbell reinserted the original cloud photo as a new layer. Next, he copied the original user mask (from Step 1) to that layer's visibility mask. He altered the color of the entire background by applying a dark-blue–to-peach vertical gradient to yet another new layer. He then copied the original user mask to the dark-blue–to-peach layer's visibility mask to combine this layer and the existing background.



5 Campbell used the black-to-white gradient mask to create a selection that would allow pixels from other layers to show through the upper area of the background. Then he applied a pattern (which he'd created in Terrazzo) as a fill from Painter's Effects menu.



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Music in the Key of USB

MAKE YOUR MIDI STUDIO HARMONIZE WITH THE NEW MACS

by Jim Heid



Macs have always been accomplished musical accompanists. Connect a Mac to a synthesizer via MIDI (Musical Instrument Digital Interface), and you can build complex musical arrangements, edit flubbed notes, and even print sheet music. Connect an audio source such as a microphone or mixer to a Mac's audio-input jack, and you can add multiple tracks of acoustic instruments and vocals. Toss in some music-loop CDs—collections of recorded rhythms and riffs—and even an amateur musician can assemble polished tunes. (If you're new to computer music, see "Get to Know MIDI" for some background.)

With their spunky processors and fast hard drives, Apple's newest generation of Macs is well equipped to handle the demands of MIDI and digital-audio production. Unfortunately, their lack of floppy drives, serial ports, and SCSI interfaces means they don't always harmonize with the rest of your music and audio tools, leaving many MIDI musicians singing the blues: *I'm sad and broke, my baby left me, and I couldn't use MIDI on my new G3.*

Well, this is one ballad with a happy ending. Whether you're outfitting a production studio from scratch or planning to upgrade from a beige Mac to something a bit more powerful and colorful, there are fixes and workarounds for every one of these problems.

Making the MIDI Connection

In the past, MIDI interfaces (which enable you to hook up MIDI musical instruments to a Mac) have connected to Macs through serial ports—ports Apple has now abandoned in favor of USB. In addition to being faster, more flexible, and more reliable, USB offers some distinct advantages over its predecessors. For example, it lets you simultaneously connect multiple interfaces, even mixing and matching brands and models. Need additional MIDI inputs and outputs? Just hook up a second interface. And USB's fast transfer rates are ideal for complex MIDI systems comprising numerous synthesizers and sound modules.

But how are you supposed to make your audio tools play nice with USB? The answer depends on whether you're just starting out or upgrading from a non-USB Mac.

Starting from Scratch If you're creating a new MIDI studio, your best bet is to buy one of the USB-equipped MIDI interfaces that are now available. I tested Midiman's (www.midiman.com) $129 Midisport 2×2 and Mark of the Unicorn's (www.motu.com) $69 FastLane USB (which is available in all five iMac flavors). Both install in a flash and work beautifully. The Midisport interface even includes both Mac and Windows driver software, making it a good choice for cross-platform performers.

Upgrading If you already have an inexpensive serial MIDI interface, buy a new USB interface—it will probably cost less than one of the adapters I'm about to discuss, and you'll get the aforementioned USB advantages as a bonus.

But if you have a high-end serial MIDI interface—for example, one that supports hundreds of MIDI channels and also handles synchronization—buying a serial-port adapter might make more financial sense. One option is to install a serial-port PCI card—such as MegaWolf's (www.megawolf.com) $249

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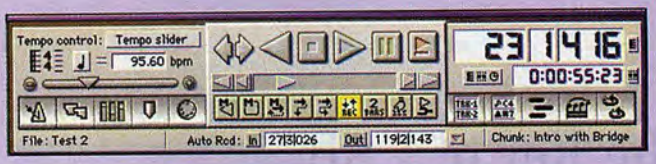
ALAN MAZZETTI

Get to Know MIDI

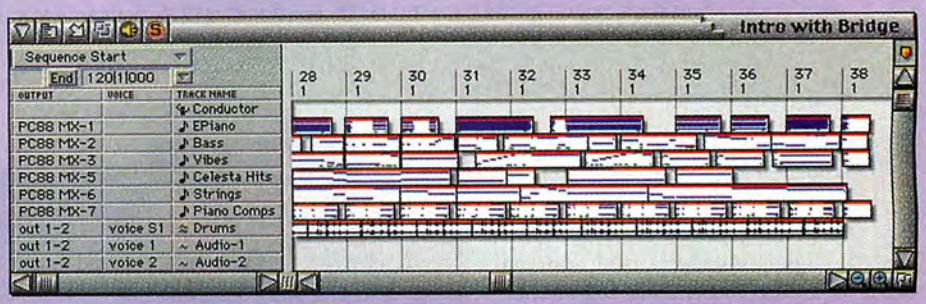
TO SET UP A DESKTOP RECORDING studio, you need one or more musical instruments (usually keyboards) equipped with MIDI input and output jacks. These instruments connect to a MIDI interface that is, in turn, connected to the Mac.

MIDI instruments transmit MIDI data when you play them. This data isn't digital audio; it's simply information about (among other things) which keys you pressed, how hard you pressed them, and for how long. MIDI sequencer software stores this data, enabling you to record, save, edit, and play back your performances.

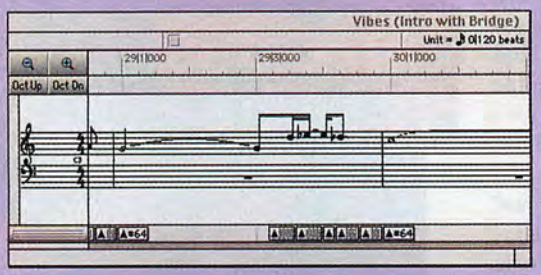
Shown here is Mark of the Unicorn's Digital Performer, popular for its combination of power and interface elegance. Other popular MIDI sequencers include Emagic's (www.emagic.de) Logic Audio line, Opcode's (www.opcode.com) Studio Vision family, and Steinberg's (www.steinberg.net) CuBase line. Each has its own operating style, but all provide features similar to the ones described here.



Control Playback Buttons like those on a tape recorder start and stop playback and rewind, pause, and record.



Build a Symphony You can build complex arrangements one track at a time, using different instrument settings, from a single MIDI keyboard. The timeline display at the right side of the window enables you to scroll through a sequence and select individual passages for modification—transposing, cutting and pasting, and much more.



Take Notes You can view each track as a standard musical score and edit notes by dragging and dropping them.

Remus/2 or $349 Romulus/4, which provide two or four serial ports, respectively—in your new computer. Unlike some serial-port adapters, these support MIDI.

If you don't have a spare PCI slot but are willing to forgo an internal modem, consider Griffin Technology's (www.griffintechnology.com) $49 gPort for G3s and G4s, or GeeThree Technology's (www.geethree.com) $49 Stealth Serial Port, which works on all USB desktop Macs. Both are MIDI compatible and install in the Mac's modem slot.

An alternative that doesn't require an expansion slot—listen up, iBook owners—is Keyspan's (www.keyspan.com) $79 USB Twin Serial Adapter, a tiny, translucent gizmo with two serial ports; it should be compatible with numerous Mark of the Unicorn MIDI interfaces. A list of compatible interfaces is available on Keyspan's Web site.

Be sure not to buy a serial adapter until you verify that it works with your specific MIDI interface. You may also need to download an updated version of your MIDI interface's driver software.

Copy-Protection Woes

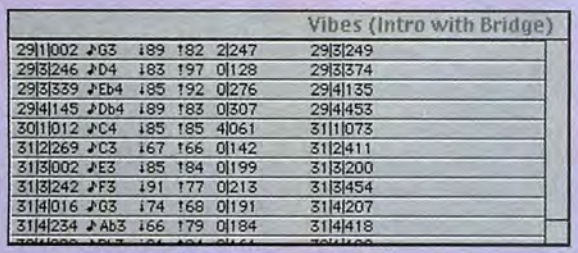
Music and audio software have long been two of the last bastions of copy protection. In the past, most software packages required floppy key disks for installation; others relied on hardware dongles that attached to the Mac's ADB port and restricted use to a single owner. Both approaches spell trouble for modern Macs, many of which lack ADB ports, and all of which lack floppy drives.

Fortunately, most software developers have discarded key disks in favor of *challenge-response* protection schemes: you contact the vendor via e-mail or phone, supply a serial number, and then receive a second serial number or phrase that you enter in a dialog box.

As for older packages or ones that haven't switched to challenge-response protection, these will require a little work.

Floppy Foibles If you need to install key-disk–protected programs, your best bet may be to buy a USB floppy drive, such as Imation's (www.imation.com) $149 SuperDisk or NewerTech's (www.newertech.com) $99 uDrive. You'll also need a free extension, USB Floppy Enabler, from Pace Anti-Piracy (www.paceap.com), the developers of the key-disk–protection scheme. (Midiman reports that USB Floppy Enabler conflicts with Midiman's Midisport USB MIDI interface; users will need to disable the extension after installing protected software.)

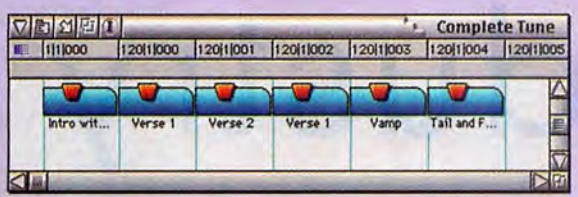
Dealing with Dongles Minitower G3 and G4 Macs have ADB ports and therefore don't present any dongle dra-



Edit Precisely For precise control over the volume and duration of notes, you can also view tracks as event notation, which numerically depicts which notes you played and how loudly you played them.



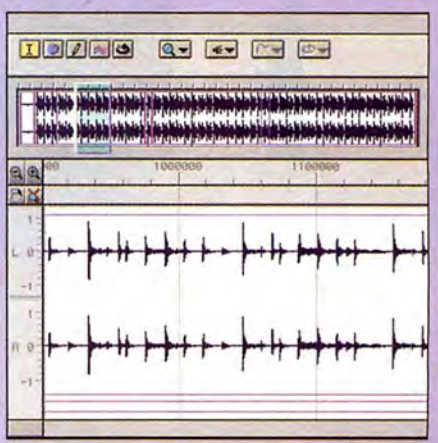
Mix It Up With the on-screen mixing console, you can adjust a track's volume levels by moving the sliders. The circular "knobs" control a track's left-right location in the stereo field.



Build Tunes You can record multiple sequences within a single file and then arrange them within a window to play back in a specific order.

Like most of today's MIDI sequencers, Digital Performer can digitally record and play back audio, such as vocals and acoustic instruments. Connect microphones to a mixing board, and then connect the mixing board's output to your Mac's microphone jack or to a high-end audio card installed in your Mac.

Large collections of prerecorded music loops—drumbeats, bass-guitar lines, guitar riffs—are available from companies such as Sounds Online (www.soundsonline.com). By importing these professionally recorded building blocks, you can create hot rhythm tracks and then add your own MIDI-based accompaniments.



Digital Waves You can view and edit an audio track's waveform.

mas. For other USB Macs, Griffin Technology's $39 iMate is a USB-to-ADB converter that works with most dongles.

Of Drives and SCSI

Recording and playing back multiple tracks of digital audio demands a fast hard drive, and today's Macs are generally up to the challenge. But for handling demanding audio tasks—for example, playing back dozens of tracks simultaneously—your stock drive might not be fast enough. If your digital-audio software is displaying error messages, it may be time to beef up your Mac's entire storage system.

For USB Macs with PCI expansion slots, the solution is to install an Ultra SCSI adapter, such as Adaptec's (www.adaptec.com) $449 PowerDomain 2940, and then to connect a fast SCSI hard drive to it.

You can also work around the problem by combining—or *bouncing*, as it's called in the recording world—multiple audio tracks in one track. Bouncing lightens the load on the hard drive dramatically by reducing the number of files it must access simultaneously. (Your original tracks are unchanged, so you can always rebounce them if you decide to make changes.) In Mark of the Unicorn's $795 Digital Performer, for example, you can use the Bounce To Disk command; most multitrack-audio programs have similar commands.

No matter what kind of hard drive you use, to squeeze the most out of your machine, follow the usual rules for optimizing performance: turn off file sharing and virtual memory, run with only those system extensions necessary for your MIDI and audio setup, and consider defragmenting your hard drive now and then.

Sounding Good

After some transitional pains, MIDI and digital audio are alive and well on today's Macs. And the future sounds even better—for example, Mark of the Unicorn is adding support for the G4 Macs' Velocity Engine to Digital Performer. This will dramatically boost performance during processor-intensive tasks such as applying audio effects.

For musicians who cut their recording teeth using analog gear, desktop digital-music production is a dream come true. And today's tools make the sequencers I used ten years ago seem almost as primitive as reel-to-reel recorders. I can't wait to see what the next decade brings. **m**

A contributor to *Macworld* since 1984, JIM HEID (www.heidsite.com) grew up in his dad's recording studio.



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ADVERTISER	INTERACT	PAGE NO.
3M-Optical	www.mmmdirect.com/apple	58
Adaptec	cdr.adaptec.com/mwtoastd	35
Adaptec	www.adaptec.com/mac	55
Adobe Systems Inc.	www.adobe.com	29
AEC Software	www.aecsoft.com	10
Agio Designs	800-688-2446	52
Alsoft	800-257-6381	12
American Power Conversion	888-289-APCC ext. 8823	49
Anthro	www.anthro.com	8
APS Technologies	800-285-0638	138,139
Aspyr Media	www.aspry.com	62
Bottom Line Distribution	800-990-5697	144
Canon, Inc.	www.ccsi.canon.com	IFC,1
Canon, Inc.	www.ccsi.canon.com	2,3
CDW Computer Centers, Inc.	800-509-4239	142,143
Connectix	www.connectix.com	51
Creativepro.com	www.creativepro.com	37
Creativepro.com	www.extensis.com/mw	65
Crucial Technology	www.crucial.com	66,67
Diehl Graphsoft	www.diehlgraphsoft.com	22
Escient	www.dvdchanger.com	45
GCC Technologies	www.gcctech.com	6,7
Getty Images	www.gettyone.com	39
Handspring	www.handspring.com	11
Hewlett Packard	www.hp.com/go/original	14,15
Hire Knowledge	www.hireknowledge.com	59
Infowave	888-842-4895	53
Intego, Inc.	www.intego.com	47
Interland, Inc	800-599-0547	54
J&R Computer World	800-221-8180	145
Kensington	www.kensington.com/imac	BC
La Cie	—	21
Mac Zones	www.maczone.com	122-129
Macromedia	800-457-1774	73
Macromedia	800-457-1774	106
MacWarehouse	800-434-3035	130-137
Macworld Expo	—	102,103
Media 100	800-579-9452	19
MegaHaus	800-786-1184	140
MicroMat	800-829-6227	24
OTT-Lite Technology	800-842-8848	56
Par Technologies / iRez	www.irez.com	57
PowerOn	www.poweronsw.com	46
PowerOn	www.poweronsw.com	48
ProDirect	800-524-9952	141
Scitex	800-579-9452	16
Sonnet Technologies	800-786-6260	94
Sony	—	9
TechWorks	800-434-4032	20
ViewSonic	800-888-8583	41
VST Technologies, Inc.	www.vsttech.com	43
XANTÉ Corporation	www.xante.com	IBC
XLR8 by Interex	www.xlr8.com	13

PRODUCT INDEX

Looking for a specific product? Simply use *Macworld*'s product index to find the page or the advertiser of the products which interest you. Then simply log on at **www.macworld.com/getinfo** and receive all the product information you need.

PAGE NO.	ADVERTISER	GET-INFO
59	Hire Knowledge	97
102,103	Macworld Expo	
20	TechWorks	129

ACCESSORIES

FURNITURE

52	Agio Designs	52
8	Anthro	–

HARDWARE

COMPUTER SYSTEMS

43	VST Technologies, Inc.	73

HARD DISK STORAGE

138,139	APS Technologies	62
144	Bottom Line Distribution	98
21	La Cie	–
140	MegaHaus	107
141	ProDirect	135

MISCELLANEOUS

58	3M-Optical	126
49	American Power Conversion	72
66,67	Crucial Technology	–
45	Escient	–
11	Handspring	–
BC	Kensington	1
56	OTT-Lite Technology	42
9	Sony	127

MONITORS/ GRAPHICS BOARDS

55	Adaptec	–
94	Sonnet Technologies	132
41	ViewSonic	–
13	XLR8 by Interex	121

PRINTERS

IFC,1	Canon Computer Systems, Inc.	23
6,7	GCC Technologies	43
14,15	Hewlett Packard	–
IBC	XANTÉ Corporation	112

SCANNERS & DIGITAL CAMERAS

2,3	Canon Computer Systems, Inc.	23
57	Par Technologies / iRez	143
16	Scitex	122

MAIL ORDER

138,139	APS Technologies	62
144	Bottom Line Distribution	98
142,143	CDW Computer Centers, Inc.	2
145	J&R Computer World	56
122-129	Mac Zones	71
130-137	MacWarehouse	18
140	MegaHaus	107
141	ProDirect	135

SERVICES

INTERNET PRODUCTS/SERVICES

37	Creativepro.com	14
47	Intego, Inc.	85
54	Interland, Inc	10

SOFTWARE

BUSINESS/PRODUCTIVITY

10	AEC Software	83
22	Diehl Graphsoft	46

CLIP ART & FONTS

39	Getty Images	–

ENTERTAINMENT

62	Aspyr Media	90

GRAPHICS/DTP

29	Adobe Systems Inc.	–
65	Creativepro.com	14
73	Macromedia	36
19	Media 100	8

MULTIMEDIA

106	Macromedia	36

UTILITIES

35	Adaptec	–
12	Alsoft	140
51	Connectix	105
53	Infowave	32
24	MicroMat	67
46	PowerOn	118
48	PowerOn	118

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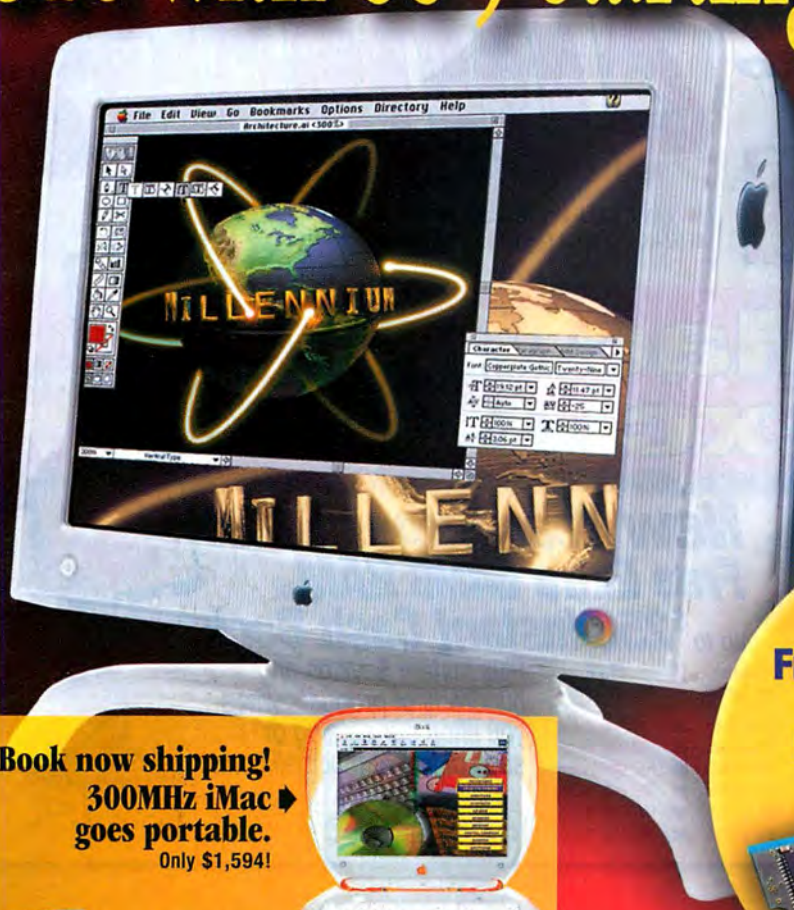


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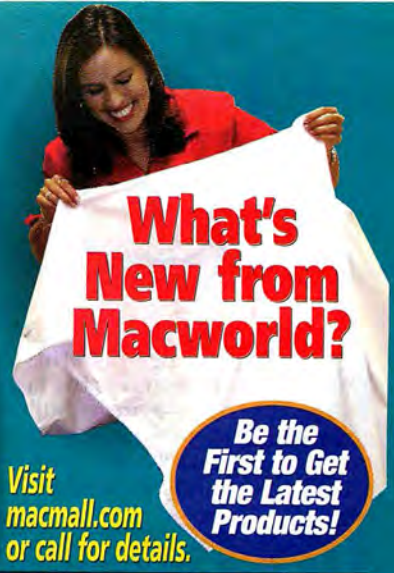


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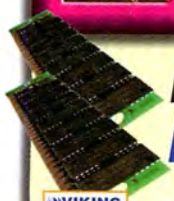
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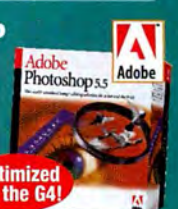


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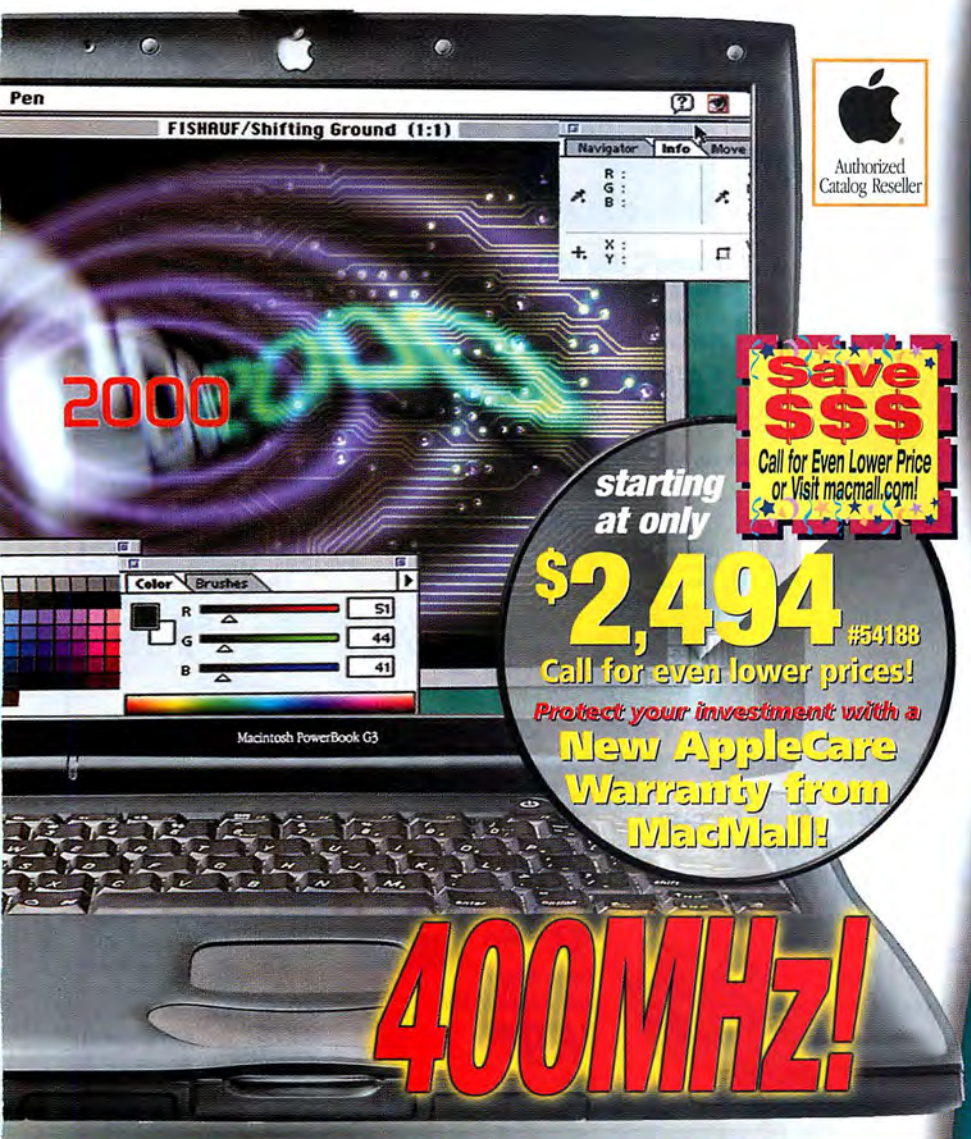
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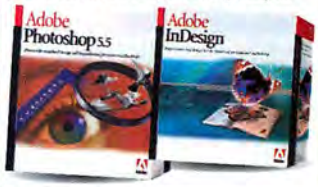
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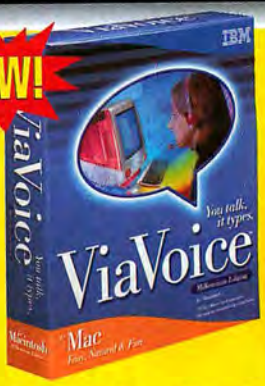
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Tangerine DV	400MHz	10.0GB	64MB	DVD	2 ports	2 ports	Yes	Yes	#112618	$1294.98	$46
Grape DV	400MHz	10.0GB	64MB	DVD	2 ports	2 ports	Yes	Yes	#112619	$1294.98	$46
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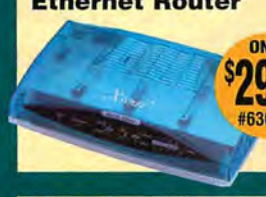
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Kodak

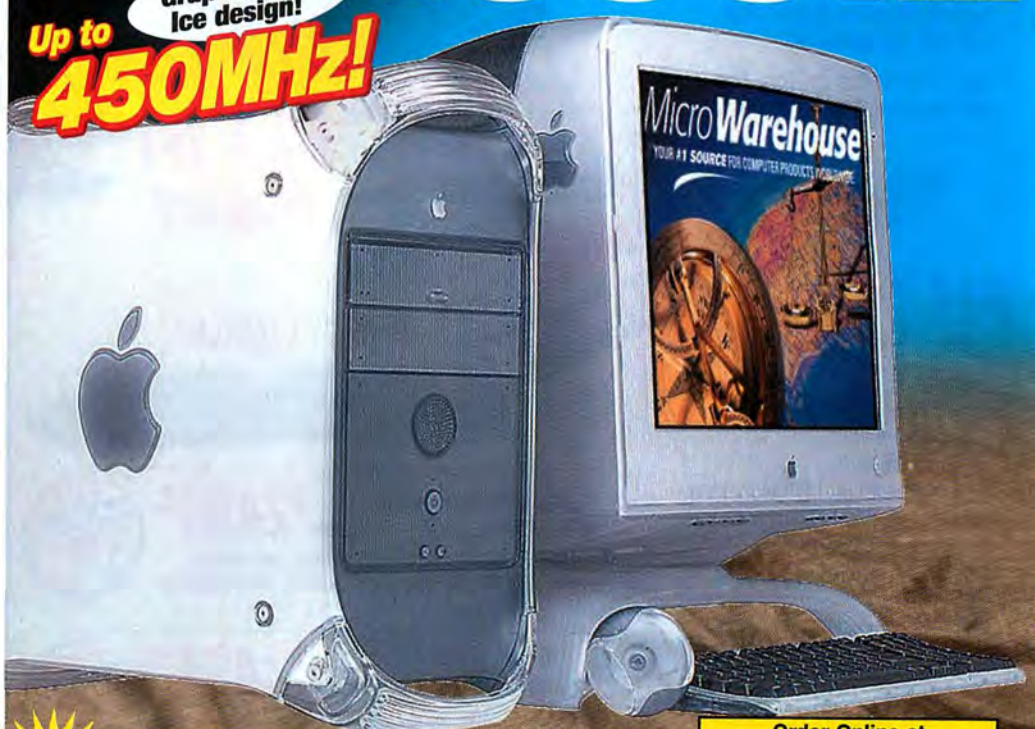
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Graphite and Ice design!

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The Power Mac G4 runs at over a gigaflop — a billion floating-point operations per second!... and a full 100% to 200% faster running Photoshop than the fastest Pentium III-based PC!*

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The next generation of Power Macs™ are built around the blazing PowerPC™ G4 processor to play multimedia and crunch data at lightning-fast speeds! It's the fastest machine ever designed to run graphics applications like Adobe Photoshop, InDesign and QuarkXPress. Blink, and you'll miss it!

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PAGE 1 OF 8

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USB Agfa

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USB EPSON

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Nikon

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Ideal for Power Mac G3 and G4!



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UMAX

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333MHz Apple iMac

- 333MHz G3 Processor • 32MB SDRAM (exp. to 256MB) • 6.0GB hard drive • 24X max. variable CD-ROM drive • 56K modem • 10/100Base-T Ethernet • ATI RAGE Pro Turbo 2D/3D graphics accelerator with 6MB video memory • 15" color monitor

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WAS $1199!
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- 15-in. color display
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- 2 USB ports (12Mbps each) • Support for AirPort 11Mbps wireless networking (antenna built-in; AirPort card optional)

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#CPU1492
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Lime:	Blueberry:	Strawberry:	Tangerine:	Grape:
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CompuCable

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- Swivel Base
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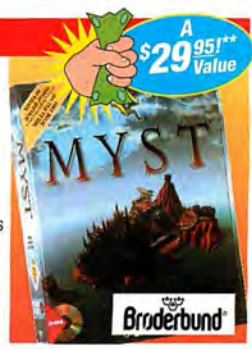


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- Harman Kardon Odyssey Audio System
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• Cool See-thru Graphite Housing!
• 128MB RAM!
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Our Apple Authorized technicians will install your RAM for only $29.95 when you purchase your new iMac and memory upgrade together!

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Zip Disk sold separately.

Iomega 100MB Zip Disks

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Farallon

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- Includes: 1 Mac serial port, 1 SCSI port, and 2 USB ports
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*Capable of receiving data up to 56Kbps. Actual send and receive speeds may vary.

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• Prints 10ppm
• 1200 dpi resolution
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• 100MHz RISC processor
• Ethernet 10BaseT/10Base2 + LocalTalk

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MAC OS 9

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Features you'll love!
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- Easy-to-use, functional interface
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- 21" (20" viewable) screen
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- Manufacturer's 3-year warranty

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IMATION

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Blueberry shown. Item #CPU1463

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IMATION

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TARGUS

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Notebook and accessories not included.

PowerBook G3 Battery

As low as $139.95!
ACC3728



- Lithium-Ion

ACC3728 (fits new 1999 models), only $139.95
ACC3307 (fits 1998 models) shown, only $199.95

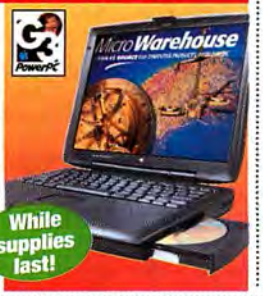
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Item #CPU1359



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*Capable of receiving data up to 56Kbps. Actual send and receive speeds may vary.

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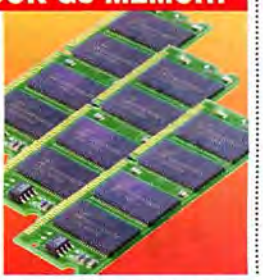
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Lime: #RCPU1496 • Strawberry: #RCPU1495
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MITSUBISHI

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ViewSonic on top

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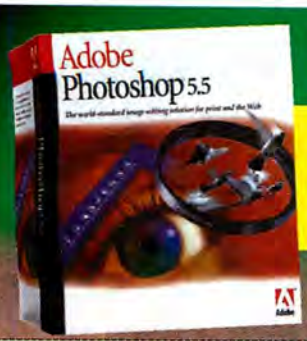
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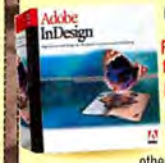
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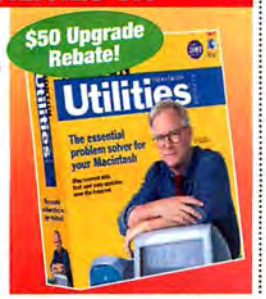
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Pro 2 Configuration

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External Configuration



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- Burn a CD in just nine minutes, rewrite in 18

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- Also reads virtually any CD at up to 20X speed

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APS Q 9GB Ultra160 LVD	7200	289.95	359.95
APS ST 9GB Ultra 2 LVD	7200	329.95	399.95
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APS Q 9.1GB Ultra160 LVD	10000	389.95	459.95
APS ST 9.1GB Ultra 2 LVD	10000	419.95	489.95
APS I 18GB Ultra 2 LVD	7200	459.95	529.95
APS Q 18GB Ultra160 LVD	7200	489.95	559.95
APS ST 18GB Ultra 2 LVD	7200	489.95	559.95
APS I 18GB Ultra 2 LVD	10000	689.95	759.95
APS Q 18GB Ultra160 LVD	10000	649.95	719.95
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- 7200 rpm drives offer reliability, performance
- 50GB for your most data-intensive creations



50 GB LVD

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EXTERNAL CONFIGURATION

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APS Ultra SCSI Drives

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Nikon Coolscan III (LS-30) (MAC)	979.95
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8x2x20 Sanyo mechanism, tray load, 2MB buffer, SCSI	$319	$369
8x2x20 Plextor mechanism, tray load, 2MB buffer, SCSI	$369	$429
8x4x24 Sony mechanism, tray load, 2MB buffer, SCSI	$279	$339

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36.4GB	7200	2MB	KN336400LW	$845
36.4GB	10,000	2MB	TN336400LW	$1050
IDE Ultra ATA/66				
4.3GB	512K	5400	QML04300LA	$95
5.1GB	512K	5400	QML05100LA	$110
8.4GB	512K	5400	QML08400LA	$119
10.2GB	512K	5400	QML10200LA	$129
13.0GB	512K	5400	QML13000LA	$135
13.6GB	512K	7200	KX313600A	$165
15.0GB	512K	5400	QML15000LA	$145
17.3GB	512K	5400	QML17300LA	$155
20.4GB	512K	5400	QML20400LA	$189
20.5GB	512K	7200	KX320500A	$209
26.0GB	512K	5400	QML26000LA	$265
27.3GB	512K	7200	KX327300A	$275
30.0GB	512K	5400	QML30000LA	$319

IBM

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18.2GB	7200	2MB	IBM318350N	$420
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ULTRA-2 SCSI				
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9.1GB	10,000	2MB	IDMVS9U2	$369
18.2GB	7200	2MB	IBM318350U2	$420
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13.6GB	7200	2MB	WDAC136BA	$155
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20.5GB	5400	2MB	WDAC205AA	$195
20.5GB	7200	2MB	WDAC205BA	$245
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HARD DRIVES

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9.1GB	10,000	4MB	ST39103LW4	$419
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36.4GB	10,000	1MB	ST136403LW	$1095
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13.0GB	5400	512K	ST313021A	$135
17.2GB	5400	512K	ST317221A	$153
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28.0GB	7200	512K	ST328040A	$240

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IDE Ultra ATA/66				
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13.6GB	5400	512K	M91301U3	$129
13.6GB	5400	2MB	M91369U3	$143
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17.4GB	5400	512K	M91741U4	$140
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NEC	CDR3000	40X	75ms	$55
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Creative	SBCD52	52X	100ms	$59
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40 GB	Seagate DDS4		1184
40 GB	Sony 10000 DDS4	120 MB/Min.	1231
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70 GB	DLT7000	600 MB/Min.	4121
80 GB	DLT8000	600 MB/Min.	4915

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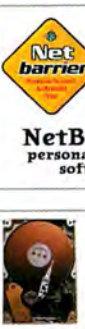
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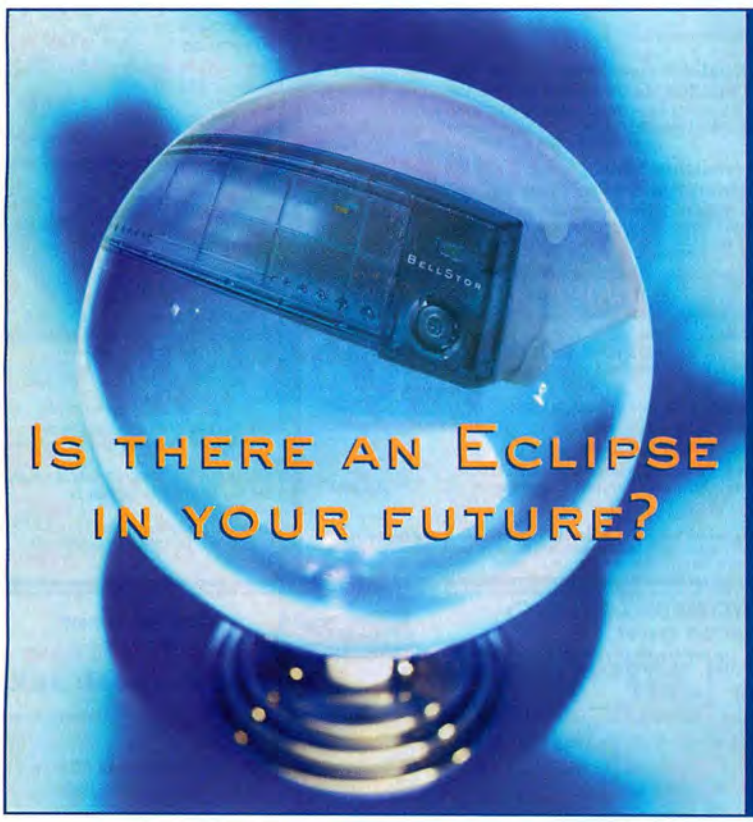
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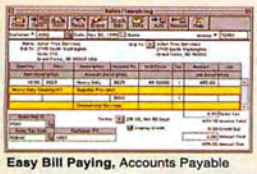
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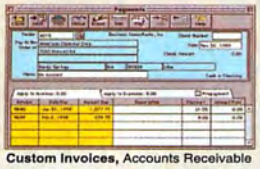
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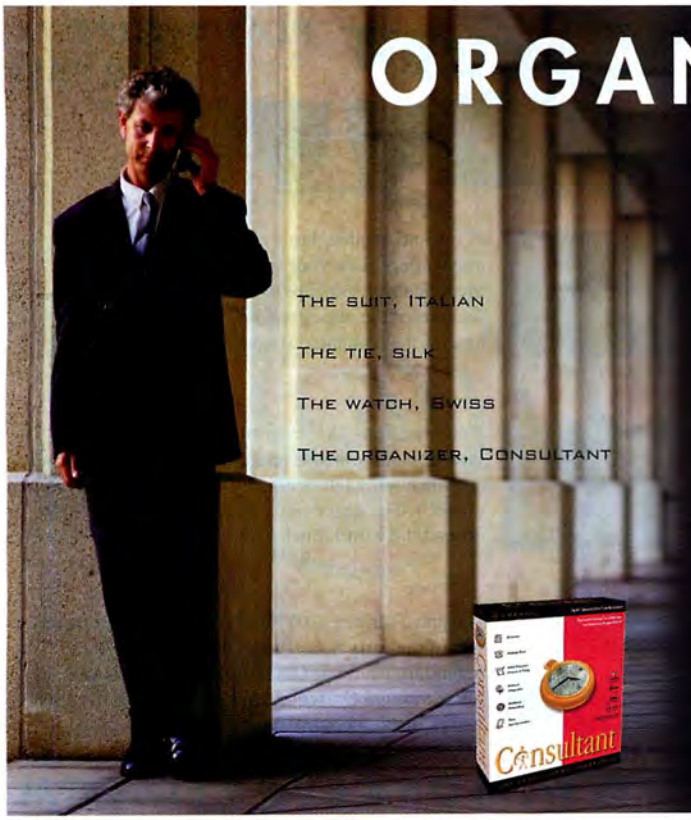
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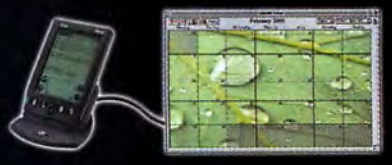
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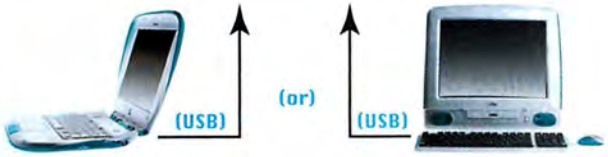
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PRODUCT INDEX

Category	Page No.
Business Operations	.154-155
Bar Code	
Inventory Management	
Education/ Entertainment	.158-159
Discount Software	
ISP	.160-161
Web Hosting	
Memory & Upgrades	.170-171
Systems & Peripherals	.162-169
USB	.155-157

Category	Page No.
Peripheral Products	.165-166
Cables	
CD Rom	
Digital Media	
Magnetic Media	
Printing Supplies	
Services	.171-174
Data Recovery	
Digital Production	
Printing	
Repair	
Classifieds	.174

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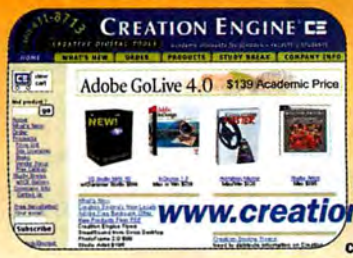


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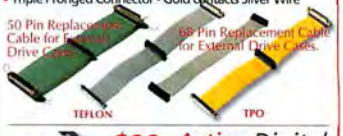
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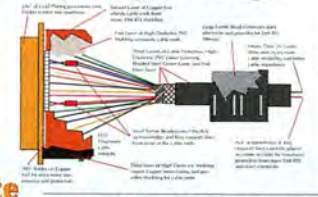
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The Desktop Critic

by David Pogue

Why Stainless-Steel Software Stinks

THINK BETTER, NOT JUST DIFFERENT: APPLE'S NEW SOFTWARE LOOK

APPLE, AS ANYONE can tell you, is flying high these days. Its stock, reputation, and sales are soaring. Most of this good fortune stems from Apple's return to its former focus: design. Sensational, rule-breaking, irresistible design. After all, without its translucence, shape, and color, what's the iMac? A Performa.

If you ask me, Apple's chief designer, young British hotshot Jonathan Ive, should get as much credit as Steve Jobs for saving Apple. But Ive isn't designing the software, and that's why we need to start worrying. For the last year, the company has been adopting a new standard-interface design, one that features a brushed-stainless-steel look. There's nothing wrong with trying to apply Ive's attitude of brazen freshness to software. The problem is that *different* doesn't necessarily mean *better*.

You can learn to dislike the new interface look in a growing tide of Apple software products: Final Cut Pro, Sherlock 2, iMovie, Apple DVD Player, and most prominently, QuickTime Player 4. You'll quickly discover that their new designs do away with many long-established and very important Mac controls. For example, the "metal" windows lack standard title bars. Without title bars, you can't tell which window is active. Nor can you window-shade these windows—a meaningful loss. Gone, too, is the zoom box in the upper-right corner, one of the most prominent Mac advantages over Windows. There *is* a nonstandard resizing handle in the lower-right corner—but in QuickTime Player it serves only to change the QuickTime movie's size, not the window's.

There's more—much more. You can find an overly harsh but deeply impassioned list of QuickTime Player's design deficiencies at the Interface Hall of Shame Web site (www.iarchitect.com/qtime.htm). A few examples of what they're saying: Buttons no longer dim when unavailable—the Play button, for example, dims whether a movie is loaded and playable or not. Apple blatantly favors cool-looking icons and buttons over informative ones but refuses to add pop-up "tool tip" labels; I dare you to figure out what QuickTime Player's shirt-button button does by looking at it. Nor is there built-in help—the Help command simply dials up Apple's Web site. And the "tray" that slides out of the bottom of the window shows a bunch of identical, nameless black squares representing your stored movies; has no scroll bar; and doesn't open at all if the window is near the bottom of your screen! Finally, there's the volume control. Making it a *thumbwheel* is the height of the New Stupidity—it's almost impossible to turn a tiny round thumbwheel with that most linear of pointing devices, the mouse. "Watching new users try to adjust the volume can be a painful experience," says the Interface Hall of Shame article.



The online reaction to this increase in bad design has been swift and punishing. MacOpinion.com: "The latest crop of industrial designers at Apple have to be rounded up and killed." Salon.com: "Does anyone at Apple still care about the Human Interface Guidelines?" The founder of Apple's Human Interface Design group himself (long since gone from Apple), interface expert Bruce Tognazzini, wrote that "no one apparently ever checked to see whether the design worked." In the first week following its release, over 15,000 people downloaded Window Fixer (www.teamdraw.com/raul/stuff), a free patch that strips the stainless steel off Sherlock 2.

The beleaguered Apple of 1997 may have cared what its customers thought. These days, however, Apple suffers from a dangerous disease: arrogance reinforced by *success*. In other words, the company thinks it knows what it's doing. (The chief arbiter of interface taste is, by all accounts, Steve Jobs himself. Jobs, says former coworker Tognazzini, has "a definite antipathy for interface designers.")

But it's not too late. Apple can have its stainless steel and its arrogance, too. It can fix the problems without losing face. It's not the new *look* that's the problem; it's the *features*. In some "point-oh-one" update, Apple could restore our beloved gizmos to the title bar and window corners, fix the volume and tray controls, and add online help.

Let's just hope Apple does so soon. The release of the biggest Mac software-redesign project in history, Mac OS X, is only months away. If relatively small-scale projects like QuickTime Player and Sherlock 2 are any indication of the direction the Apple ship is taking, the time for a course correction is right now. m

DAVID POGUE (www.davidpogue.com) wrote, with Adam Engst, the new *Crossing Platforms*, a two-way Mac/Windows dictionary (O'Reilly, 1999).

PETER HOEY



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